

DECEMBER 1922 - No. 203

Monthly

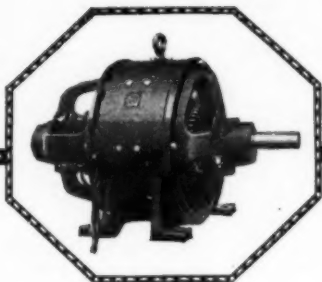
A Reference for Buyers

HITCHCOCK'S
**MACHINE
TOOL LIST**

Distributed Free to Machine Tool
Users Everywhere in the United States and to
Dealers in American Machinery Abroad

Published by
A. H. HITCHCOCK
1220-1235 Caxton Building
Chicago

FOR INDEXES SEE LAST PAGES



Engineers said,

"Put extra strength into the end brackets."

By following the suggestions of 35 engineers who know from practical experience where motor breakdowns come, we designed end brackets for Type T motors that will stand the extra strains which are sure to come on tough jobs. The brackets have deep channel-shaped sections in the arms, and deep outside ring. The extra strength here is one of the things that put Type T motors beyond the ordinary into the heavy duty class.

There are also three big little things on the brackets—a real heavy self-closing oil-hole cover, a large oil overflow cup, and a pocket under the oil well for sediment.

These are details that you may pass over in selecting motors but they all have an important bearing on your big question, "How continuously will the motor stay on the job?"

Bulletin 2014 contains complete evidence of how Type T motors are built to meet more than ordinary needs.

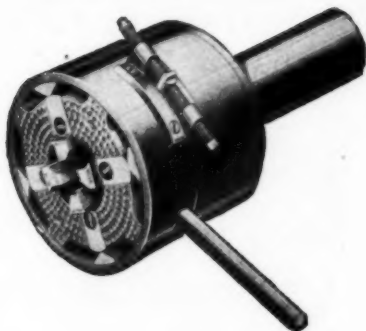
Reliance Electric & Engineering Co.

1050 Ivanhoe Road, Cleveland, Ohio

BRANCHES: BOSTON, NEW YORK, PHILADELPHIA,
PITTSBURGH, CINCINNATI, DETROIT, CHICAGO

We specialize in motors, sizes 1/2 to 200 h. p., constant and adjustable speed D. C.; squirrel cage and slip ring A. C.

Type **T** *Heavy Duty*
RELIANCE MOTORS,
Direct Current



Figuring Threads —

Every estimate made for a customer is carefully figured by our Thread-Engineering Dept.

And the exact NAMCO tool is selected for your specific needs.

NAMCO Collapsing Taps— up to 7 $\frac{1}{8}$ "

NAMCO Self-Opening Dies—up to 4 $\frac{1}{2}$ "

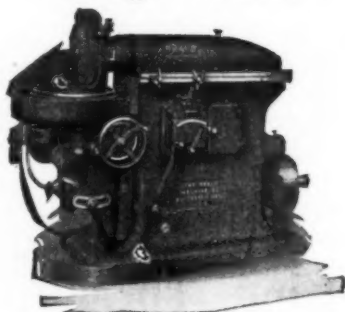
Estimates without obligation.

THE NATIONAL ACME CO.

CLEVELAND, OHIO

NEW YORK BOSTON CHICAGO DETROIT BUFFALO WINDSOR, VT.

For Surface Grinding Large Work



Heald Rotary Surface

On large rotary surface grinding the Heald Style No. 25, equipped with a 16" chuck, will handle it to best advantage. The massive construction of the machine together with the hydraulic drive for slide, lends itself to this class of work, giving big production and excellent finish.

It is ideal for large rings, flanges, friction discs, collars, etc., on which the grinding must be concentric with the hole. This same machine can be furnished with either an 8" or 12" chuck.

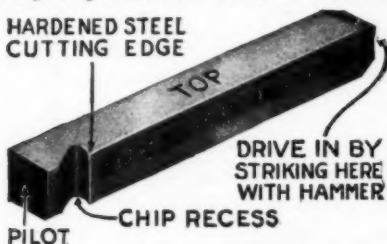
Ask us to send you literature.

The Heald Machine Co.
6 New Bond St., Worcester, Mass.

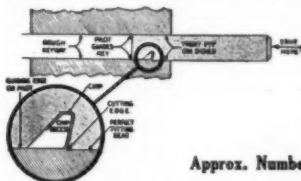


FREE TRIAL OFFER

Every key sizes and fits its own seat



To quickly prove the usefulness and the time saving of "Keytites" we will send to any one, who regularly uses more than 100 keys a year, one of these self-fitting keys. Tear out this page, attach to your letterhead, and fill in the data—



Key Size:

Width

Depth

Length

Approx. Number Used Yearly

Drive a "Keytite" into the ordinary keyseat and leave it there. The cutting edge sizes the rough keyways to make a finished fit. Does not require a skilled mechanic and saves the cost of hand-fitting.

SMITH & SERRELL

Coupling Specialists Since 1912

33 Central Ave., Newark, N. J.

THE BEST

There is a Best of Everything
And in this
case this

KEYSEATER

MILLS the BEST KEYSEATS

THE miller fits exactly in the hole being keyseated and the cutter is centrally located in the tool, making it impossible to mill inaccurate keyseats. The guide following up the cutter assures good keyseats in alignment. With this miller keyseats are milled of uniform width and depth and parallel sides. This is accomplished by a rotary cutter which mills keyseats in one cut, it being only necessary to pass the tool through the hole just once.

Write for Catalog O

National Machine Tool Co.

2268 Spring Grove Ave., Cincinnati, O.



A Strong Portable Key-Way Cutter

This handy little tool is easily taken right to the job where it cuts key-ways of just exactly the right dimensions. It does the work quickly, accurately and at minimum cost, saving labor and money. Just clamp the

tool to the shaft and turn the crank.



New Style "B"

Style "B" has six milling cutters and cuts keyways from $\frac{1}{4}$ " to 2" wide, in shafting 2" to 8" in diam. and 12" long without resetting.

THE BUCHER-SMITH CO.

East Liverpool, Ohio

The Rapid New Catlin No. 1 Reduces Keyseating Costs!



**It's a big
success in
Navy Yards
Automobile Plants
Government Shops
and many other
Domestic and
Foreign Factories
because it always
makes good!**

So simple in construction, so rapid in operation and withal so durable, that it is easily the most efficient and economical Keyseater made.

In ordinary shop practice without any attempt to establish records, the "Catlin" cut in 20 minutes keyseats $2\frac{1}{2}$ " long, $\frac{1}{2}$ " wide and $\frac{1}{4}$ " deep in 20 mitre gears of 8" diam.; in 3 minutes, a keyseat 6" long, 1" wide and $\frac{7}{16}$ " deep in a cast steel hub. It has less than half the parts of other keyseaters. The picture shows the No. 1 Catlin, belt driven, with three-step cone pulley. Our other sizes, for belt or motor drive, cover practically all keyseating requirements.

*You ought to know more about this big
economizer—let us mail you the folder*

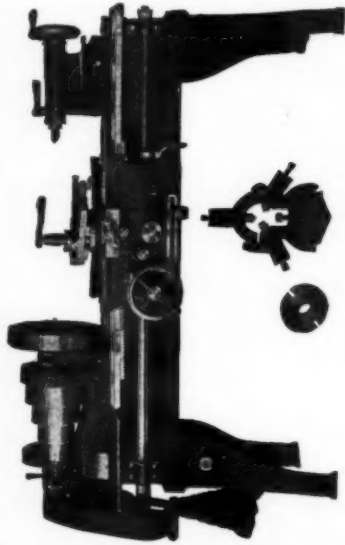
Chattanooga Machinery Company
Chattanooga, Tenn.

Barnes Lathes

9 to 18-inch swing

Small lathes for
model and ex-
perimental work.

Large size for
general machine,
repair shop and
garage work.



Send for Catalog

W. F. & John Barnes Co., 123 Ruby St., Rockford, Ill.

In A Class By Itself!

The "Small Lathe with the BIG PUNCH"
Is Unsurpassed In Value



Quick-Change.
8:224 Thread Range.
24" Between Centers.
1 $\frac{5}{8}$ " Hole Thru Spindle.
11" Swing Over Bed.
16" Swing Over Gap.

\$139.00 Complete
F.O.B. CINCINNATI, O.

Prompt Deliveries

And furthermore—The "ARTISAN" Lathe gives complete satisfaction because it is a sturdy, dependable Tool, capable of handling work within its capacity just as accurately and more quickly than larger machines costing several times its price.

THINK IT OVER! It will pay YOU to investigate.

Artisan Manufacturing Co., 839 West Sixth St.,
CINCINNATI, O.

PRYIBIL



Manufacturers and
dealers of machine
tools, lathes and
wood working
machinery.

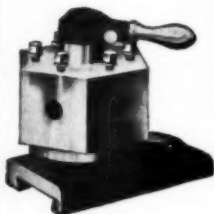
Catalogues and prices on request

ESTABLISHED 1859

**P. PRYIBIL MACHINE CO.
INCORPORATED**

512-524 West 41st Street, New York, N. Y.

Help Yourself—



Your Product

can be manufactured
cheaper by an F. & S.
Turret.

Install one of these at-
tachments on your Lathe
and note the increase in
production.

FAY & SCOTT, DEXTER, ME.

Double Engine Lathe Production



McCROSKY STEADYRESTS

Are doing that and more wherever they are used. They reduce the number of imperfectly centered pieces to **Zero**. They cut down the time of operation practically **50%**. The gain is yours.

Send for a McCrosky Steadyrest Bulletin today.

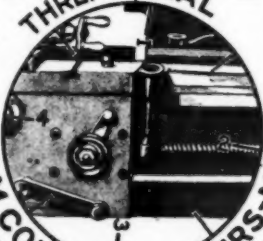
McCrosky Tool Corporation
Meadville, Pa., U. S. A.

Branches and Agencies in all principal cities

Export Agents: Benjamin Whittaker Inc., 21 State St., New York



E - THREAD DIAL - Z



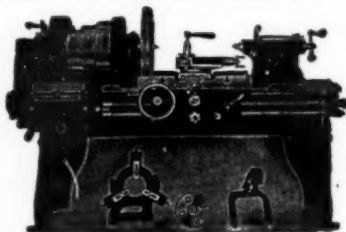
J.M. COLVEN YONKERS-N.Y.

Easy to Attach
Cut cost of thread cutting on your engine lathes.

Easy to Use
For All Sizes of Lathes

The E-Z Thread Dial will save time and material if you cut threads on Engine Lathes

Shall we send Circular telling why?



The 18" Heavy Duty Quick Change Gear MUELLER Engine Lathe is a marvel for rigidity, ease of control, and durability. It is the kind of Lathe you need in your shop to meet present day competition.

Let us tell you all about it

The Mueller Machine Tool Company

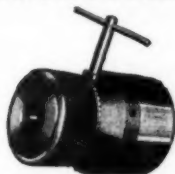
Radial Drills and Lathes

ESTABLISHED 1902

CINCINNATI, O.

The Ney "Positive Grip" Draw-In Collet Chuck

A New Product



Holds hot or cold rolled bar stock, round or hex. Does away with hand wheel and tube, does not reduce spindle capacity of lathe, permits feeding through of bar stock up to 1".

Can be mounted on spindle nose of lathe by means of regular adapter furnished; or mounted on face plate of any lathe by means of adapter plate furnished instead.

Chuck is applicable to lathes, hand screw machines, universal grinders, milling machines and tool holder for turret lathes.

Chuck is furnished with standard equipment of six collets: $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ " and 1". As each collet will hold work $\frac{1}{32}$ " over or $\frac{1}{32}$ " under size, you practically get 18 collets in the standard equipment of six.

Descriptive circular and price list upon application

The J. M. Ney Company
Hartford, Connecticut, U. S. A.

Give Us A Trial

On your next order for Hollow
Bored Forgings and Steel Shafts



When it comes to furnishing such items as *Lathe Spindles, Piston Rods, Rams, Clutch Shafts*, etc., you will find us a reliable source of supply, with dependable products, prompt deliveries and the right prices. If there's anything you need now, send along your blue-prints and we'll take good care of you. Thank you.

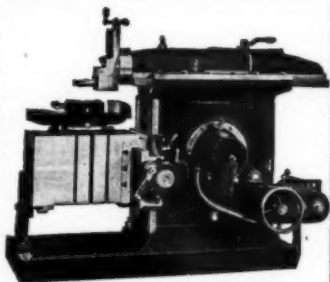
American Hollow Boring Co.
Erie, Penna.

COLUMBIA SHAPERS

The patented quick-change feed is a particularly worthwhile feature. Provides eight to twelve changes, amount and direction of feed easily and quickly changed. Saves time and effort, increases output.

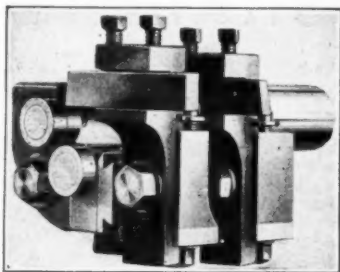
A typical Columbia operating convenience

Let us tell you about the others.



16", 20", 24", 28", 32"
Cone, Single Pulley or Motor Drive

The Columbia Machine Tool Company
Hamilton, Ohio



BIGGS—Model C

All Steel Tangent Cut Box Tools

Improved Design, Easy to Adjust

Made to fit all sizes and types of hand and automatic screw machines.

The Tangent Cut gives correct clearance and will maintain accuracy under the heaviest cuts.

Increase your production by using our Models C or D.

They are SUPER-PRODUCTION TOOLS

Send for circular

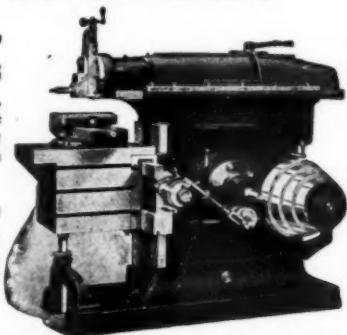
P. H. BIGGS

1235 W. 9th St., CLEVELAND, OHIO

SHAPERS

12", 14", 16"
Plain Crank,
16", 20", 25"
B. G. Crank,
either Cone
Driven or
through
Speed Box.

28" and 32"
Back Gear-
ed Crank,
Single Pul-
ley Drive.



The Smith & Mills Co. Station B.,
Cincinnati, O., U.S.A.



SHAPERS



ALWAYS DEPENDABLE

OHIO Shapers, by reason of the variation of speeds and feeds possible, are adaptable to a wide range of work and besides, they are substantially constructed of quality materials by skillful workmen—which means long life in YOUR service.

A catalog?

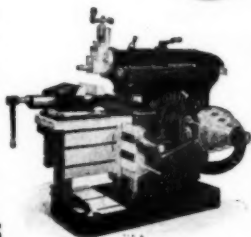
DEPENDABLE ALL WAYS

The Ohio Machine Tool Co.

Established 1887

817 So. Leighton St.,

KENTON, OHIO





The Rhodes Shaper

**Is an India Paper Edition
of the Larger Machine**

It is complete in every detail,
and being easier to handle will
out-perform any shaper made
on small work.

It is produced in a single size
with a 7" Stroke, and it is priced
in proportion to its size.

Ask your dealer or write for
CATALOGUE H22

The Rhodes Mfg. Company
984 Park Road, - Hartford, Conn.

SHAPERS—RHODES—SLOTTERS

For Sale—

A Profitable Manufacturing Business

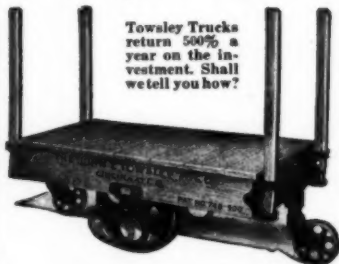
On account of retiring from business, we are offering for sale the patents and all tools, dies, jigs and fixtures for the manufacture of the *J. & B. Filing and Sawing Machine*. Hundreds of manufacturers are reducing their tool and die costs by using this practical, ingenious machine.

Here is your opportunity to take over an established and profitable manufacturing line with a reputation.

For particulars write to—

Johnson & Biddle Tool Co.
ELKHART, INDIANA

"Towsleys" for Wear and Profit



Towsley Trucks
return 500% a
year on the in-
vestment. Shall
we tell you how?

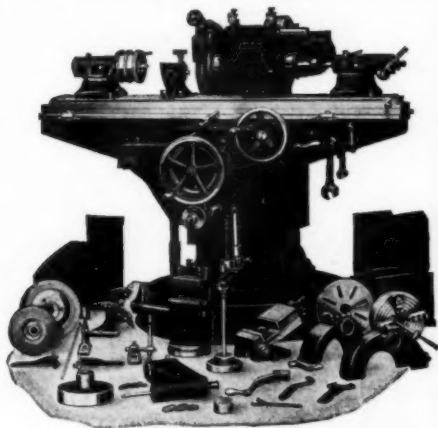
Warehouse
Style,
Shelf
Construction,
Box
Trucks,
Slatted
Package
Trucks,
Etc., Etc.

Delighted to discuss this with you. May we?

John T. Towsley Mfg. Co., Cincinnati, Ohio
Wood-Working Machines—Gluing Appliances—Factory Trucks

ALL Your Grinding—

Done Accurately, Quickly and Economically



The Thompson 10"x36" Universal Grinder

DOES IT ALL SO WELL that you are sure to lower your cost records, while its accuracy will improve your work. It is equally good on plain, surface, edge, die, cutter and internal grinding. An exclusive feature is the fixed position of the wheel, to which the work is easily and quickly adjusted.

Write for details of this modern cost reducer

OUR SELLING REPRESENTATIVES:—

Notch & Merryweather Mchy. Co.
Cleveland, Ohio
Manning, Maxwell & Moore, Inc.
New York, Philadelphia, Pittsburgh,
Buffalo, Cincinnati,
St. Louis, Seattle
Hill, Clarke & Co.,
Boston, Mass.
Kemp Machinery Co.,
Baltimore, Md.

Riverside Machinery Depot, Detroit, Mich.
Coughlin-Kirkby Mchy. & Sup. Co., Toledo, O.
Wayne Mchy. Co.,
Ft. Wayne, Ind.
Dayton, Ohio
Chicago, Ill.
F. E. Batterlee Co.,
Minneapolis, Minn.
F. O. Stallman Supply Co.,
San Francisco,
Los Angeles, Calif.

FOREIGN:

Bevan & Edwards Pty., Ltd.,
Melbourne, Sydney

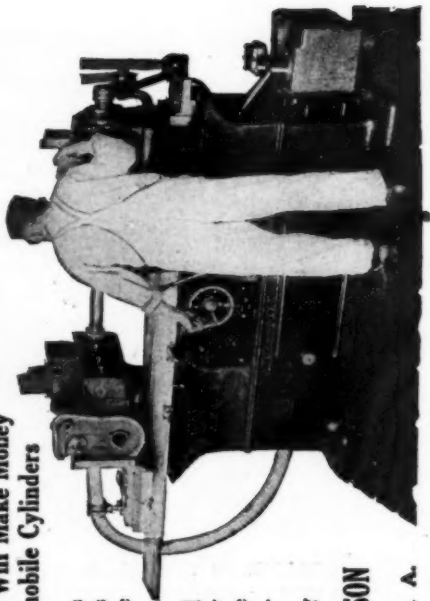
Selson Engineering Co., London, Belgium,
France, Italy

THE THOMPSON GRINDER CO., Springfield, Ohio

AUTO REPAIR SHOPS

**The Whitney Cylinder Grinder Will Make Money
For You Regrinding Automobile Cylinders**

The grinding wheel travels in a true circle and grinds off only enough to make a hole that is round and straight. This machine does the work right and does it quick. That's why you can do a profitable business with a Whitney.



Write for new catalog

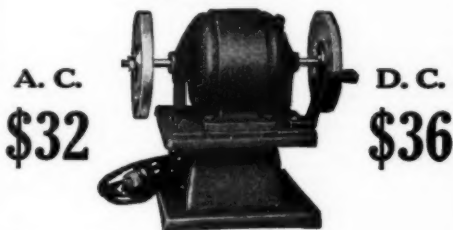
BAXTER D. WHITNEY & SON

Incorporated

WINCHENDON, MASS., U. S. A.

THE NEW BLOUNT SPECIAL

Plain Bearing
Grinder and Buffer
Complete with Motor



A. C.
\$32

D. C.
\$36

General Specifications:—

Motor:—Westinghouse $\frac{1}{4}$ h. p.

Spindle:—Ground and Threaded.

Flanges:—Machined all over.

Bearings:—Bronze.

Rest:—Cast Iron.

Grinding Wheel:—6"x $\frac{1}{2}$ ".

Buff Wheel:—6"x $\frac{3}{8}$ ".

Base & Pan:—Cast Iron & Slotted for Guards.

Guards:—Furnished at extra cost.

Flexible Cord:—8' to 10' long with Plug.

J. G. BLOUNT CO., EVERETT, MASS.

DUWELL

Motor Driven Bench Grinder

Complete as Shown, \$45



Thoroughly high grade, with powerful dust proof motor, **GEARED** to shaft; bearings Bunting phosphor bronze, steel and fiber gears. Buffer, wire brush wheel, chuck and flexible shaft can be furnished if desired. Universal motor operating on either a.c. or d.c. Indispensable wherever tools must be kept sharp, small parts ground, polished, buffed, cleaned, etc.

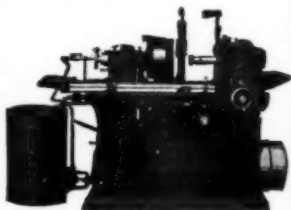
MANUFACTURED BY

J. A. FINLEY CO., GRINDER DIVISION
20 Braintree St., Allston, Mass.

"HYDROIL" Internal Grinder

for
Greater Production
**BELL-MOUTH
ELIMINATED**
Accuracy
Finish

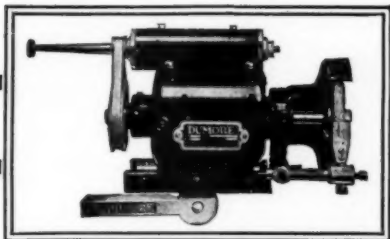
This machine has a table speed up to 30 odd feet a minute. On short strokes it will reverse 300 times per minute without shock or hand operation.



We will be pleased to give you complete details in substantiation of our claims. Write for bulletin G280H.

MACHINE TOOL DIVISION





No. 2-AG Grinder, 30,000 R. P. M.

ATTACHED in a moment to lathe, shaper or milling machine, the No. 2-A. G. DUMORE is instantly busy on internal work, or grinding flat, concave or convex surfaces. And doing it all without the tearing down of original set up!

Light in weight, coming completely equipped with endless canvas belt, cutter grinder rest, cross-feed lever, cord, plug and hardwood carrying case, this efficient grinder offers to alert buyers an opportunity to make a paying investment.

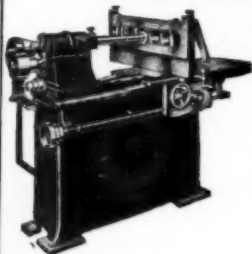
Your dealer sells the DUMORE No. 2-A. G. Ask him about it *today!*

WISCONSIN ELECTRIC COMPANY
4352 Sixteenth Street, RACINE, WISCONSIN

DUMORE HIGH SPEED **GRINDERS**

Regrinds 6 Ford Blocks a Day

And Larger Cylinders in Proportion



The "SCHMIDT" Internal Grinder

Regrinds ALL makes and sizes of tractor, truck and automobile engines.

Rugged in construction, simple in operation, and its work is the best.

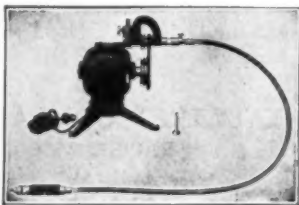
A money maker for
auto repair shops

Better send us your name today for full particulars

B. L. Schmidt Co., Dept. A 8, Davenport, Ia.

The "Hard to Reach" places are easy with Haskins Equipment

Write for catalog No. 36



It will show
you how

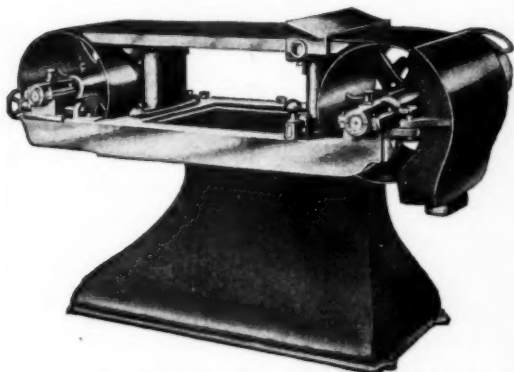
Haskins' Flexible Shafts

will increase
your profits.

R. G. Haskins Company
520 W. Monroe St., Chicago, Ill.

Peerless Surfacing Machines

The Abrasive Belt Method



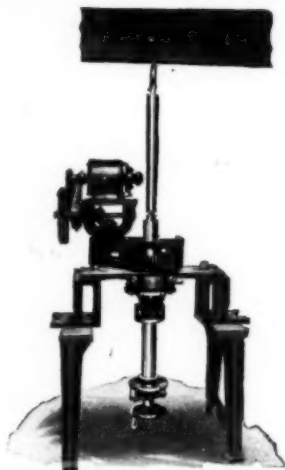
No. 2 Horizontal Model. Abrasive Belt 14"x11'1".
Machine weighs 900 lbs. and requires 2½ H. P.

Peerless machines are rapidly displacing the old style set-up wheel and the disc grinder, and have taken the place of the milling machine in many operations.

We make both horizontal and vertical types to use abrasive belts 9", 14" and 20" wide. There is also the Peerless Junior for bench work.

Peerless Surfacing Machine Co., Inc.
Troy, New York

Something New



The Pedrick Boring Unit

This picture of drilling an overhead beam is only an indication of what the Boring Unit can do. It is intended more for other work than for drilling, but to get the whole story, write for a circular.

The Boring Unit removes the limitations from the portable boring bar, and reaches a field of work that otherwise requires the largest machine tools.

Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

Builders of Portable Cylinder Boring Bars, Crank Pin Turners,
Portable Millers, Pipe Benders, etc.

Magazine-Feed Screw Driving

If you drive either wood or machine screws in any quantity and are not using Magazine-Feed Machines, it is not your fault or the fault of the machines, but ours.

It is because in some way we have failed to make clear to you the wonderful economy of Magazine-Feed Screw Driving.

If you could see how scores and scores of good concerns, with anywhere from one to thirty and over of these machines, are saving 65 per cent and upwards in screw driving costs, you would want them yourself—of course you would.

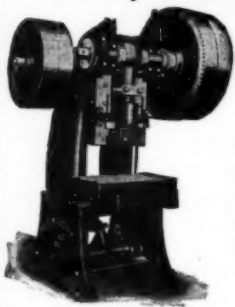
All we ask now, however, is just an opportunity—the opportunity to tell you just what Magazine-Feed Screw Driving is and what it does to save time and money and expedite production.

And if at the same time you will advise us the dimensions over all of your work and the length of screws you are driving, we can make you a definite money-saving proposition.

Will you give us that opportunity today?

The Reynolds Machine Company
Dept. H. H., Massillon, Ohio

L-J Heavy Inclinable Power Press



Cut shows our No. 5, which is made in plain fly-wheel, geared and combination geared types. Capacity, 52 tons. Also several smaller sizes. Unsurpassed as practical shop tools. Better write for illustrated folder.

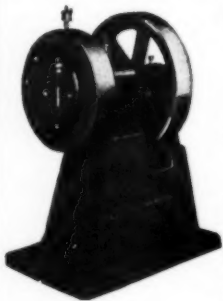
Our Dealers

Herberts Machinery & Supply Co.,
San Francisco and Los Angeles, Cal.
Northern Machinery Co., Minneapolis
Brown Machinery Co., St. Louis
English Tool & Supply Co., Kansas
City, Mo.
Stocker-Rumely-Wachs Co., Chicago
Niverside Machinery Depot, Detroit
Cyril J. Rath & Co., Cleveland, Ohio
Reliance Mch. Sales Co., Pittsburgh
M. D. Larkin Supply Co., Dayton, Ohio
Joseph Beal & Co., Boston, Mass.
Dale Machinery Co., Inc., New York
J. L. Lucas & Son Inc., Bridgeport, Conn.
G. T. Reynolds & Son, Providence, R.I.

Write to the nearest, or

Loshbough-Jordan Tool & Mche. Co.
Elkhart, Indiana

For Reducing Metals To Circular Form



**By a Hammer Action of
Extreme Force and Rapidity**

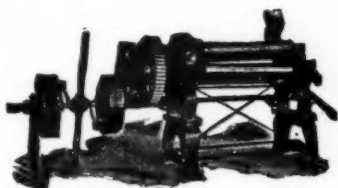
We can save you money if your
work can be done on—

The Etna Rotary Swager

The piece to be swaged need
not be circular, but it comes out
round, whether straight, tapered
or pointed.

Send us sample or blueprint of
your work and let us figure how
it can best be done.

**The Etna Manufacturing Co., TOLEDO,
OHIO**



BELOIT

INITIAL TYPE

Sheet & Plate Bending Rolls

The Beloit Initial, or side bending, type roll has been designed to meet the demand for a strong, efficient, quick acting roll for use where the heavier Pyramid Type is not required. It is especially adaptable for use in shops handling sheet metal and for the lighter class of work in Boiler Shops, such as stacks, breeching small tanks, and the like.

The upper roll is geared to the adjustable lower roll thus pinching the plate, while the idle roll, which is also adjustable, does the bending. The outer housing is hinged and the upper roll is raised by throwing a cam lever, thus permitting the removal of sheets bent to a full circle. All styles of these rolls are double back geared and require a minimum amount of power.

Built in twenty-six sizes with capacities up to 5/16" and from 14" to 98" between housings.

HENDLEY & WHITTEMORE CO.

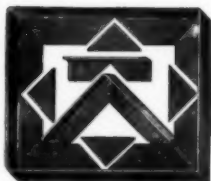
100 S. State St.,

BELOIT, WIS.



**Hand
Power
Angle
Shear
AND
Notch-
ers**

THE LITTLE **BLACKSMITH**



WRITE for BOOKLET

**J. F. KIDDER MFG.
COMPANY**
BURLINGTON, VERMONT

The Only Difference

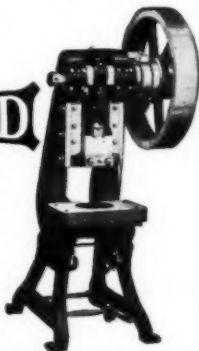
is not just price. The big thing is **service**. An investigation of the merits of

HIGH DUTY
ROCKFORD
PUNCH PRESSES

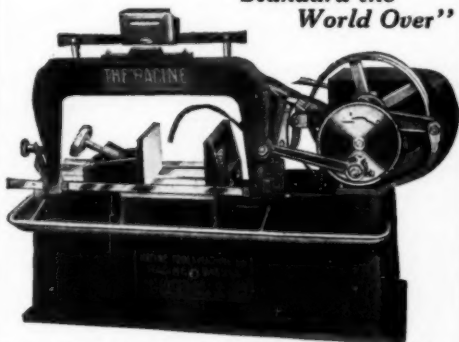
will give you a new idea of what you should get in punch press service. Definite, dependable reliability under all working conditions.

Write today for complete construction details.

Rockford Iron Works
ROCKFORD, ILL.



*"Standard the
World Over"*



No. 7-A Heavy Duty Machine—12" x 12" cap., 3-Speed Att.

The Lift Does It

Ordinarily the cutting of metal is a time-consuming job—a cost-increasing detail of production.

Racine High Speed Metal Cutting Machines, by their positive lift on the non-cutting stroke, combined with their perfect alignment, do more rapid, accurate work and greatly reduce the frequency of blade changing. Thus they cut production costs.

Capacities for all requirements.

Write for catalog H.

Racine Tool & Machine Co.

Racine, Wis., U. S. A.

Use "Racine" H. S. Tungsten Power and Soft
Center Hand Blades

"QUICKWORK"

Registered in U.S.A. and Foreign Countries

Rotary Shears

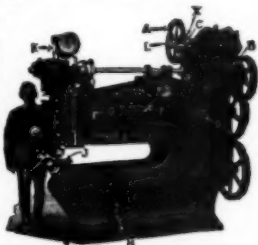
Made in 7 Sizes

Cut all gauges of sheet and plate metal up to 1 inch thick in straight or irregular shapes and openings without cutting in from side of sheet. Leaves square, true edge that requires no finishing. Used in building ships, boilers, tanks, cars & general plate and sheet metal work.

Save 50 to 90%

Eliminates Oxyacetylene cutting and plate planing

Write for catalogue No. 60



Patented June 3, 1912; Aug. 26, 1921.

THE QUICKWORK COMPANY, St. Marys, Ohio, U. S. A.

Cable Address "Quickwork." All Codes Used

An Economical Cutter

Peter's Abrasive Metal Saw

Primarily designed for the tool room, for cutting off high speed and other hardened tool steels in a fourth the time required to nick and break it. Saves time and expensive stock. Also for cutting off angles, channels, tees, etc., etc. Wonderfully handy and a big money saver. Every shop should have one.

8" Size \$22.50, with C. S.
Splendid for tool room. Cuts high-speed steel up to 4" square.

12" Size \$60, with C. S.
Cuts up to 2 1/2" diameter, round or square, at any angle up to 45 degrees. Ball bearing.

15 Days' Free Trial

Write us or ask your dealer

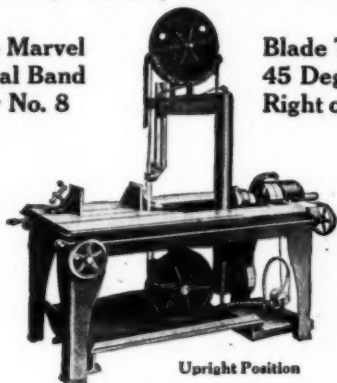
PETER BROTHERS MFG. CO.
115 Railroad St., Algonquin, Ill.



IT'S DIFFERENT. Has Three Speeds Has Heavy, Roomy Bed or Work Table

**The Marvel
Metal Band
Saw No. 8**

**Blade Tilts
45 Degrees
Right or Left**



Upright Position

A Universal Metal Cutting Band Saw of greater usefulness, because of its exceptionally high-grade construction, ease of operation, great range and capacity. It saws up to 45 degrees angle while work is stationary in vise. Both band wheels tilt to perfect alignment with saw blade. Capacity of throat: depth 18", height 20"; at 45 degrees angle, depth 18", height 14".



**Saves
stock
Saves
time
Saves
labor
Saves
money**

Full information gladly furnished

Armstrong-Blum Mfg. Co.

341 N. Francisco Ave.,

Chicago, Ill.

Nicholson Arbor Presses

—are the result of accumulated experience. They have some new and all the old features of convenience, and are built to endure the hardest service. Frames are of the best semi-steel, with racks, pinions and levers of heat-treated chrome nickel steel. Several sizes. Full description is yours for the asking.

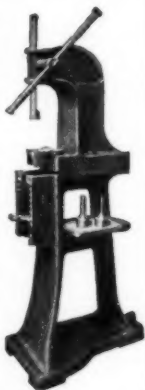
Nicholson Expanding Mandrels

Save Time, Labor, Space

Get details of 30-day trial offer

W. H. Nicholson & Co.

117 Oregon St., Wilkes-Barre, Pa.



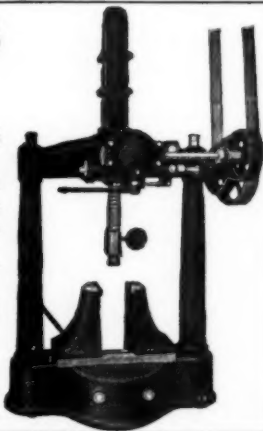
ATLAS 30 Ton Power Press

will give you
greatest possible
efficiency on your
production work.

*ATLAS Presses are built
in all sizes and types.*

Atlas Press Co.

Kalamazoo, Mich., U.S.A.



Save Many Costly Hours



Type BB

Fitting Dies with 1-Man 4-Post New Manhattan Screw Press

A toolmaker requires no help in handling any dies. Machine is sensitive, rigid, powerful. Perfect alignment of punch and die is assured. Table is 20"x36", and there's abundant room between bed and ram. Press is also made in three smaller sizes. All up-to-date cost reducers.

Manhattan Grinder

Is accurate, runs silently without chatter. Both feeds have graduated dial. Has all latest adjustments and attachments.

Details and prices on request

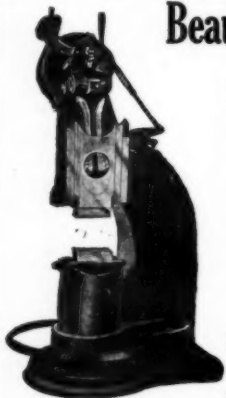
MANHATTAN MACHINE AND TOOL WORKS

Dept. A

GRAND RAPIDS,

MICHIGAN





Beaudry Hammers

For General Forging

Quicker than Steam,
more powerful than
Air, more flexible
than either, and
lower first and oper-
ating costs.

Catalogue on request

BEAUDRY & CO., Inc.
45 Bromfield St.,
BOSTON, MASS.

T.H.L. Front Lever Bench Punch

Malleable iron body; working parts hardened. Steel shaft and plunger. Die cannot lose alignment with punch. All parts interchangeable. Built for hardest, toughest work.

PRICE \$50

Extra Punches, 20 cents each;
extra dies, 25 cents.

Capacity 13/32" thru 1/4" steel,
11/32" thru 5/16". Punches up
to 1/2". Weight, 70 lbs.

A good buy; can ship promptly

**T. H. LEWTHWAITE
MACHINE CO.**

(Est. 1890)

417 E. 31st St., NEW YORK



CANEDY-OTTO

C-O Equipment Now Buys Itself

Under the new C-O Credit plan, there is no reason longer to postpone the purchase of needed time-saving and money-making tools and machinery.

By depositing only one fourth of the cost of the equipment you need, immediate delivery is obtained. The balance is taken care of monthly out of increased earnings, and a handsome profit can be realized besides.

Decide now to earn all the profit that your shop is capable of producing, by investigating the C-O Credit Plan.

Ask your jobber.

*Write for Catalog
Address Dept. D.*

CANEDY-OTTO MFG. CO.

*Manufacturers of Automotive Equipment,
Drills, Punches, Shears, Shrinkers,
Countershafts, Grinders, Buffers,
Forges, Blowers, Tuiere Irons
and Blast Gates.*

Main Office and Factory:

Chicago Heights, Ill.

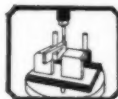
New York Branch—407 Broome St.



The C-O 21" Drill is designed for heavy, accurate work. Spindle travel is 12". From spindle to base, 43". Drills to center 21 $\frac{1}{8}$ " circle.

**"The Well Equipped Shop
Gets the Business"**





The Hartmann Universal Drilling Fixture

saves set-up time and often the cost of special fixtures. Handiest device made for tool room work.

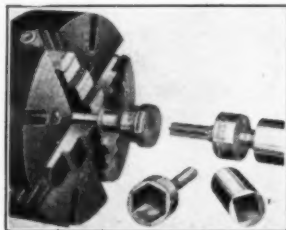


The Hartmann Adjustable Universal Joint

has made a big success on marine engine propeller shafts up to 300 H. P. Excellent lubrication. Wear and backlash easily taken up by adjustment of bearings.

The Hartmann Mfg. Company
308 Pearl Street, - HARTFORD, CONN.

"Watts" What?



A method of drilling Angular Holes.

On a production schedule of 2000 pieces one of our users advises that they saved \$1.11 per Square Hole, by applying our method to this work, eliminating the drifting and slotting, which was the old method in use.

They, like you, thought it couldn't be done.

May we have the pleasure of sending you our Catalog No. 5?

Sole Manufacturers and Patentees

Watts Bros. Tool Works

Turtle Creek, Penna., U.S.A.

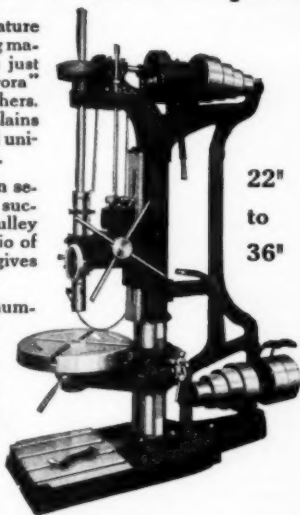
—power at the drill point

That's the vital feature about *any* drilling machine, and that's just where the "Aurora" outranks all others. And that also explains its big output and universal popularity.

One of the "open secrets" of its great success is the large pulley diameter and ratio of gearing, which gives it that extra pep.

There are also a number of special features—the cost-reducing kind—that are especially interesting during these days of necessary readjustment.

For extraordinary drill value consult our Catalog today



DRILLING TESTS OF 24" AND 26" DRILL

Size of Hole	Spindle Speed	Feed per Minute	MATERIAL
1"	360	9½"	Cast Iron
1"	360	6½"	Mild Steel
1½"	350	6½"	Mild Steel
1½"	350	9"	Cast Iron
1½"	225	5½"	Mild Steel
2"	225	6½"	Cast Iron

The Aurora Tool Works
Aurora, Indiana, U. S. A.

Single and Multiple Spindle Drills

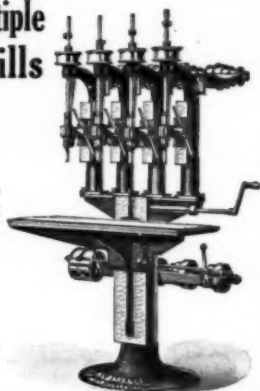
**1/2" & 3/4" Capacity
In Cast Iron**

Made accurately to do
production work at
capacity rating.

**Power feed if
you want it.**

Francis Reed Co.

43 Hammond St.,
WORCESTER, MASS.



The Buhr ^{Multiple Spindle} Drill Head With 3 to 12 Adjustable or Fixed Spindles

With the adjustable spindles, set-ups can be made circular, rectangular or staggered. Sample adjustments shown below.



Also Fixed Spindle Drill Heads, bronze or ball bearing, made to fit your work. What is *your* drilling problem? Tell us.

NELSON-BLANCK MFG. CO., Detroit, Mich.

New York Office: 50 Church St.

\$

\$

GET
THE
Avey

WATCH
YOUR
OUTPUT
INCREASE



WATCH
YOUR
PROFIT
GROW

\$

THE AVEY DRILLING
MACHINE CO.
CINCINNATI
OHIO

\$



Armstrong Tools



Tool Holders

Over 100 shapes and sizes for every operation on Lathe, Planer, Shaper, Slotter, etc.—the only complete line. Better have our Tool Holder Catalog.

Ratchet Drills

For all purposes—"Packer," for rough service; "Standard," for general use; "Weston," extra heavy; "Universal" and "Short Ratchet." Ask for Ratchet Drill Catalog.

Drop Forged Wrenches

All kinds. All sizes. Finished, semi-finished and unfinished. Write for Catalog of Steel Wrenches.

Clamps and Dogs

Drop forged. All shapes and sizes. Highest quality. Alloy steel screws. Separate Catalog.

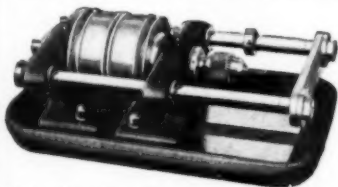
Armstrong Bros. Tool Co.

"THE TOOL HOLDER PEOPLE"

308 N. Francisco Ave., Chicago

Whitney Friction Driven No. 1 Tapping Machine

Saves Taps—Insures Perfect Threads and Holes



Capacity
Up to $\frac{1}{4}$ "

Weight
85 lbs.

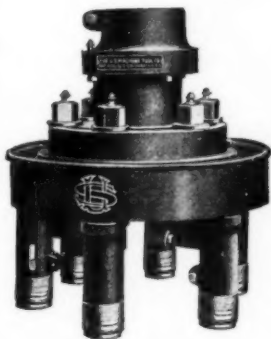
Friction drive and reverse—very sensitive. Ball bearing end thrust. Saves taps, gives perfect results, and its quick and easy control insures maximum output. Complete with countershaft, Jacobs chuck and cross bar for holding work fitted to your job. Special fixtures on order. Write for prices.

Whitney Metal Tool Co.

95 Forbes Street,

Rockford, Ill.

For the Price of One— “U. S.” Gives You Several



The U. S. Multiple Spindle Drill Head

With
Adjustable
or Fixed
Spindles

Enables you to drill several holes at once on any single spindle drill press. Their big saving of time and money makes them highly desirable equipment in every shop where such drilling must be done.

The **patented** double adjustment of spindles permits drilling in any pattern—in squares, triangles, rectangles, ovals, straight line or staggered. We furnish them regularly with from 2 to 6 spindles. Special heads made to your specifications—also fixed multiple spindle heads made to order. All our spindle heads drill with the same speeds and feeds you use for drilling single holes.

*Writing us about your needs places you under no obligation.
A production estimate from us may surprise you.*

The United States Drill Head Co.
Cincinnati, Ohio, U. S. A.

LOOK

At The Opposite Page

And

Read The Following Description

The new machine is equipped with a power feed and an Automatic Reverse. The tap runs perfectly free and for this reason an accurate thread is cut, as the tendency of the tap to cut oversize or the metal to stretch is done away with. The operator starts the tap into the work, after which his responsibility ceases. The production which may be obtained is simply a question of the stamina of the tap.

The new machine drives through a friction governed by the automatic feed which is in turn controlled by another friction. By this arrangement the machine may be set to be very sensitive and will slip before breaking the smaller sizes or it may be adjusted to pull the larger coarse thread taps.

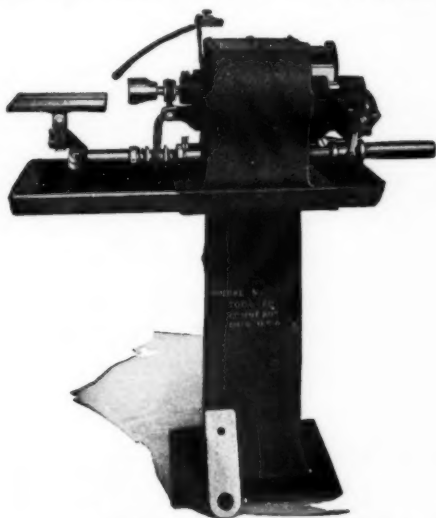
The driving frictions are of the taper cone type. This type eliminates all shock to the tap and practically overcomes tap breakage. The working parts run in oil. The thrust of the spindle is taken on ball bearings. The machine is equipped with Skinner Positive Drive Tap Chuck, also pump and tank for supplying lubricant on the tap. The table is full universal. A face plate is also furnished which may be used when part to be tapped is too large to be easily handled on the table. The machine is single belt driven, or if several sizes of taps are to be used, a three-speed countershaft can be furnished.

The machine has a capacity from $1/8$ to $5/8$ of an inch in steel. Better gather up some samples of the work you have to tap and send them to us.

We will give you actual production figures.

THE BURKE MACHINE TOOL CO.

The New Burke Automatic Tapper



A new power feed friction driven machine, designed to meet the present-day demand for greater production of accurate threads and with less tap breakage. It is a machine well worth investigating if you have very much tapping to do.

Circular mailed upon request.

Production Counts

O. **297 East 16th St., Conneaut, Ohio**



Save The High Cost Of Tap Breaking

For several years Woodstock Safety Tapping Chucks have been used on all kinds of difficult tapping in government shops, automobile plants, etc., and have never been found wanting.

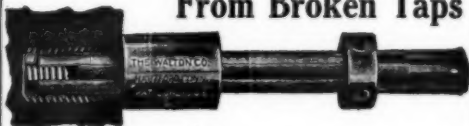
The Woodstock Improved Safety Tapping Chuck

positively eliminates tap breakage. It automatically releases when tap binds or strikes bottom, while utilizing 95% of strength of tap. A small boy can adjust it without error. Uses standard hand and machine taps.

Will you let a trial convince you?

Peter Bros. Mfg. Co., 115 Railroad St.,
ALCONQUIN, ILL.

Stop Losing Time From Broken Taps



When taps break at or below the surface, as they often do, it means lost time and wasted expense, and often causes damage to the work, unless you have a—

Walton Tap Extractor

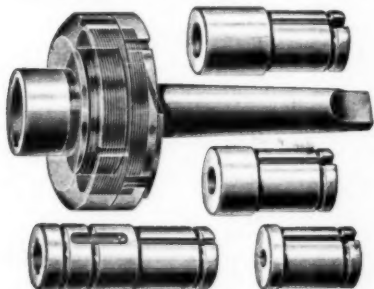
It removes the broken pieces in a few minutes without injury to the threads. Pays for itself over and over—often during the trial period. Sizes No. 8 to 1¼".

Write for folder and 60 days' trial

THE WALTON CO., Hartford, Conn.

Lengthen the Life of Your Taps

By Using SAFETY Drill and Tap Holders



"Safeties" Give Satisfaction Everywhere

The Safety—friction driven—Tap Holder puts within easy reach of every shop a real, worth while economy. Tap breakage is **prevented**, and this means you save not only the cost of new taps, but cut out the expense of labor involved in removing broken ones and the consequent expensive delay of the work in hand.

The Safety permits tapping to the bottom, and enables you to change from drilling to tapping and vice versa without stopping spindle. Tap breakage is eliminated because tap driver stops instantly under any undue torsion.

The Safety is regularly made in five sizes, to drive taps up to 2½" diameter inclusive.

*Prevention is always better than a cure—
Let us help you save those valuable taps*

The Beaman & Smith Co.
Providence, Rhode Island

Not a Tight Rivet In Millions With The "Grant" Rotary



A user writes:

"I cannot imagine any improvement that could be made on the work of the Grant Rotary Rivet Spinner, and for the spinning of rivets where it is absolutely essential that they shall not be up-set even to the slightest degree, I do not know of any machine which does the work so satisfactorily. I think we have not had a single case of a tight rivet in all the millions we have put in with them."

Write for Catalog, or send us a sample of your work, or both

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

Burnishing by the Bushel High Quality Work at Lowest Cost



The
Abbott
Burnishing
Barrel

The Abbott Steel Ball Process

Is scientifically developed to the point of perfect burnishing service on *all kinds* of small metal parts. Immensely cheaper than buffing one piece at a time, and produces a smooth, glass-hard surface. It combines *economy* with *quality*. If you don't know about it, we believe we can surprise you.

*Write for copyrighted Booklet and send samples for burnishing
All sizes of burnishing balls and soap chips for prompt delivery*

The Abbott Ball Co., Elmwood District,
Hartford, Conn.

R-S Collapsible Taps

Produced by
R-S Experts

This modern tool makes good in every shop that gives it a try-out. It's the ripe product of careful and exhaustive experimenting by our corps of experts, and we recommend it to all users as being on a par with the now famous R-S (Boehm) Automatic Die Head.



A collapsing tap is more efficient than the solid kind, and the R-S is *positive* in action, so that it *cannot fail*. You can withdraw the chasers at any time because its action does not depend on springs or similar contrivances. The capacity is for 1 in. and up.

*Write for Circular giving
full details and interesting
information*

Rickert-Shafer Co.

1110 Cherry St., Erie, Pa.

Thor Portable Electric Drills

**For Drilling, Reaming, Wood Boring
and Screw Driving**

New 16-Page Book Showing Complete Line Free

Jacobs
Chucks
Regular
Equipment



Agents Wanted

**Independent Pneumatic
Tool Company**

600 West Jackson Blvd., CHICAGO

Offices and Agents Everywhere

Add To Your Profits

Learn How From the Book Called

“Jarvis”

It tells of Quick Change
Chucks and Collets that do
wonders in the saving of
machining time.

The Book gives details.

Send for it. It is free.

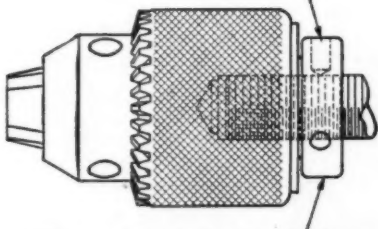
**The Geometric Tool Company
New Haven, Conn.**



ADAPTERS

For Fitting Jacobs Chucks To Breast Drills

Hole to fit handle on key.



The adapter is simply a lock-nut threaded to fit the spindle.

These adapters have been designed to meet the demand of users of breast drills for a drill chuck of the Jacobs Quality that will securely and accurately hold drills and can be operated with the ease for which this chuck is famous. Secure maximum efficiency from your breast drills by fitting a Jacobs Chuck to the spindle.

CHUCKS AND ADAPTERS ARE FURNISHED IN THE FOLLOWING SIZES:

CAPACITY	CHUCK MODEL	THREADED
0- $\frac{3}{8}$	No. 2B	7-16x22 V thread
		9-16x24 V thread
0- $\frac{1}{2}$	No. 6B	9-16x24 V thread
		5-8x24 V thread
		7-16x22 V thread

Write for Descriptive Circular H-18

The Jacobs Manufacturing Co.
2074 Park Road, Hartford, Conn.

New Hisey SUPER

Are more

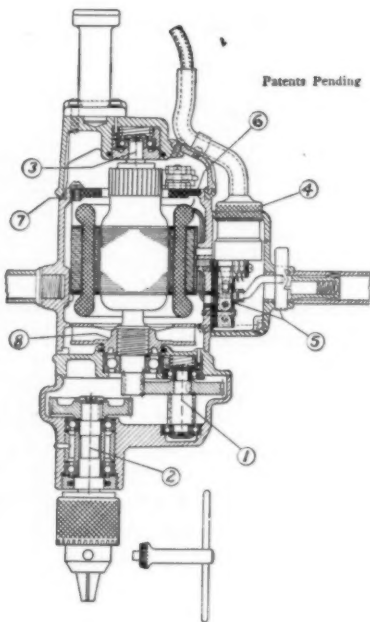
POWER need
the New Hisey S

CURRENT C
capacity.

MOTOR of
dangerously high
life of machine)

MECHANIC
into the construct

Patents Pending



1. Ball Bearing
2. Ball Bearing
3. Ball Bearing
4. Quick Cable
5. Famous Hisey

Exhaustive te
tinue to do more

A close-bul
drills, has proven
is less than other

Exclusive Wi

For maximum
Drill, and be conv

THE HISEY-WOLF MACHINE

AGENTS IN ALL PRIN

PER Universal Drills

more efficient from all angles

WEAR necessary to do the work. There is an abundance of this in
w Hisey Super Drill, and some to spare.

CURRENT CONSUMPTION is lower than any drill of same rated
y.

MOTOR of our own design, is cool running. Does not operate at
ously high speed (a feature which reduces wear and adds to the
machine) and is equipped with a practical commutator of liberal size.

MECHANICAL DESIGN determines the life of any machine. Look
e construction of this new Hisey Super Drill.

Ball Bearing Gear Spindle

6. Adjustable brush holder yoke

Ball Bearing Chuck Spindle

7. Improved vent openings, safe-
guard the motor and interior
parts against accidental and
willful abuse

Ball Bearing Motor Shaft

Quick Cable Connector

8. Improved ventilating fan

Famous Hisey Patented Switch

haustive tests have proven that Hisey Drills *will do* and *will con-*
do more work at lower operating cost than any other machine.

closest emulation by prominent manufacturer using several hundred
as proven that the maintenance (cost of up-keep) of HISEY Drills
than other machines.

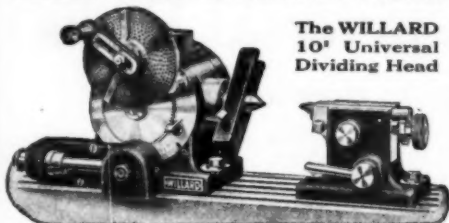
clusive Hisey features produce these facts.

r maximum production with uninterrupted service, insist on a Hisey
nd be convinced.

CHINE CO., Cincinnati, Ohio

ALL PRINCIPAL CITIES

Takes Care of Heaviest Cuts



**The WILLARD
10° Universal
Dividing Head**

YOU WILL FIND these index centers reliable for any job on a milling machine. The graduated swivel head adjustable at any angle between 10 degrees below horizontal to 10 degrees beyond vertical. Clamping device is specially rigid. Spindle has No. 10 B. & S. taper and is made of the highest grade steel, hardened and ground. Head and tailstock centers made of best tool steel. Complete index plate. All parts interchangeable. Made right or left hand. *Full details sent you on request.*

The Willard - Middletown Machine Co.
Middletown, Ohio

The U. S. Miller and 14" Drill

*Are two moderate-priced machines which
should have their place in every shop.*

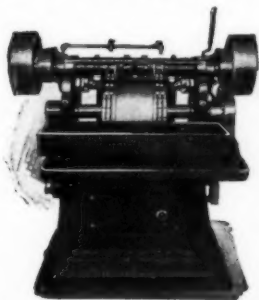
The No. 1 U. S. Improved Hand and Weight Feed Milling Machine is a tool of quick adaptability and wide range, with more power than any similar machine of equal size. It is especially efficient in the rapid milling of small duplicate parts.

The 14" U. S. Sensitive Floor Drill cannot be excelled for drilling holes $\frac{1}{2}$ " and smaller.

Write for full details and close prices

The United States Machine Tool Co.
Cincinnati, Ohio

Continuous Milling



The Craftsman Continuous Rotary Miller mills four rows of work simultaneously. Production costs are slaughtered by this machine. Our repeat orders are our best testimonial. Let us study your milling problems.

Below are shown some of the parts Craftsman Millers are milling.



Our story is short. Let us tell it to you.

THE CRAFTSMAN TOOL CO.
CONNEAUT, OHIO

Wear-Ever Adjustable Spacing Collars



PATENTED

Save milling machine set-up time.

Eliminate paper shims and thin steel washers.

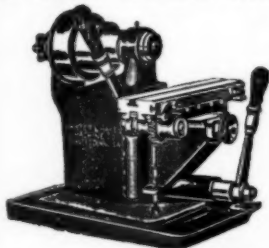
Positive adjustments on accurately ground surfaces.

Made with adjustments 1/1000 inch or more.

Stock collars $\frac{3}{4}$ " to $2\frac{1}{2}$ " bore with adjustments of 2/1000 inch are SENT ON APPROVAL.

SCULLY-JONES & COMPANY, 2012 W. 13th Street
CHICAGO, ILLINOIS

Just The Machine



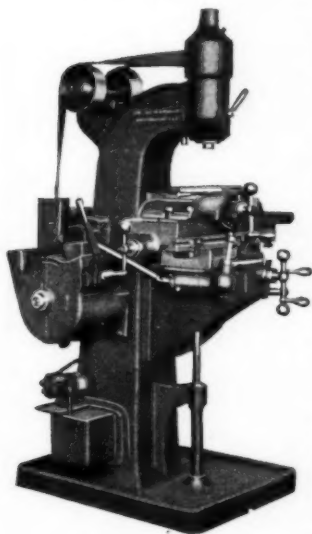
for those light cuts on details for Fire-arms, Sewing Machines, Typewriters, Bicycles, Electrical work, and a thousand and one other details used in the manufacture of the various products of the manufacturing world.

Send for descriptive circular

THE CARTER & HAKES MACHINE CO., West Winsted,
Conn., U. S. A.

NEW ENGLAND AGENTS—Hill, Clarke & Co., Boston
NEW YORK AGENTS—Hardinge Sales Co., Grand Central Palace
WESTERN AGENTS—Marshall & Huschart Machinery Co.,
Chicago, St. Louis, Indianapolis.

The Taylor & Fenn
Vertical Milling Machine
With Circular Milling Attachment



Eliminate cutter breakage by running your cutters at their proper speed.

Save time and money by adopting efficient methods of milling the lighter classes of work you do so frequently on large and more costly Vertical Milling Machines.

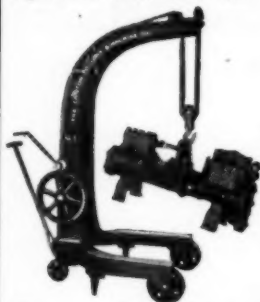
Reduce the expense and increase the quality of the work it is possible to do with the Circular Milling Attachment.

Look over your production work, dies, jigs, fixtures, etc., and submit a problem to us within the range of this machine.

You'll be interested in complete description; may we send it?

The Taylor & Fenn Company
Hartford, Conn., U. S. A.

Saves Labor of Several Men



The "CanTon" Portable Crane, Hoist and Truck

enables one man to do the lifting and lugging which ordinarily requires the combined efforts of 6 to 10 men. 'Nuff sed.

That it will pay for itself in a short time, is a foregone conclusion. Many sizes.

Write for Bulletin E-8

Canton Foundry and Machine Co.

Canton, Ohio

New York Office: 45 West 18th Street, Second Floor

Anderson Improved Ever-Ready Balancing Ways

Balance 'most anything that revolves



Extremely sensitive. Discs accurately balanced. Always ready—need no adjustment—no leveling needed—no centers required. Last indefinitely. The hardened spindles hold their accuracy—don't become indented with ordinary use. Get the folder and close price.

"Swing"	20"	40"	60"	72"	96"
Greatest distance between standards.....	20"	30"	30"	66"	88"
Capacity in lbs.....	1000	2000	2000	5000	10000
Approx. shipping weight.....	45	90	150	350	650
Code.....	Bea	Bid	Bis	Bib	Ben

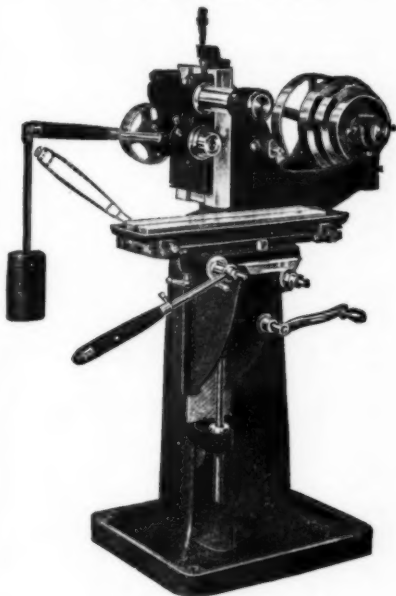
Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

"Whitney" Hand Miller

THOUSANDS IN USE



The Sliding Head

**gives advantages in accurate and rapid production
which no other type of Hand Miller can equal.**

Prompt Deliveries

The Whitney Mfg. Co., - Hartford, Conn.

Chains—Keys—Hand Milling Machines

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Diamond, Whitney, Baldwin, Duckworth and
Coventry Chains, Block, Roller and
High Speed Silent types on hand



CATALOG

CULLMAN WHEEL CO.,
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COOPER UNIVERSAL JOINTS FLEXIBLE COUPLINGS

"YOU CAN'T BREAK THEM OR WEAR THEM OUT"

Smooth; neat; only 5 simple parts; large oil space;
working surfaces case-hardened; no limit to size;
guaranteed stronger than shaft at any angle.

6 PATENTS



Three hundred years ago Hooke invented the Universal Joint with fixed centers. Three hundred years have elapsed and still the Hooke type of universal joints are burning up power and breaking in operation.

The Cooper Patented Universal Joint with no fixed centers is just as frictionless as the crosshead of an engine at any angle. *"You can't break them or wear them out"* with shafts joints are bored for. Perfect lubrication at any speed.

Sizes $\frac{1}{4}$ " to 2" in stock bored to fit YOUR shafts.

Send for one and try it out

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CATALOG

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FROM YOUR CHIPS, SHAVINGS AND WASTE



No. 400—Capacity: 2 Bushels

The Curtis Ball Bearing Oil Extractor is built to make money by saving oil that otherwise would be wasted. In a few months' time the cost price is returned and then the saving is practically net profit.

It's a method of modern economy that should be in operation in *your* shop. Made in three sizes.

*Buy a Curtis now and you'll buy less oil for many years thereafter.
Don't delay your investigation.*

Albert B. Curtis Estate

Box 44

-:-

-:-

Worcester, Mass.

Style D.



Opened.

JUDGMENT

Of lower court affirmed on the validity of our Patent No. 1134025, issued March 30, 1915

Our Style G Cup patent was sustained October 24, 1922, by U. S. Circuit of Appeals, Second Circuit, N. Y. City. Get the worth while line of

Tucker Oil Hole Covers

Catalogue No. 6 for your Literature

Style G.



Opened.



W. C. & F. C. TUCKER, Hartford, Conn., U.S.A.

FOREIGN AGENTS: Festwick Freres & Co., Paris, France
Alfred Herbert, Ltd., Yokohama, Japan

—used by the machine tool trade

Tri. B. Brand Pack Carbonizer

A light, fast, long-lived carbonizing agent, widely and successfully used by the machine tool trade and in many lines of steel fabrication for deep hardening in boxes in muffle furnaces.

This ideal product is made entirely of hard carbons—there is not an ounce of any volatile matter in its composition, and consequently there's no internal combustion as is the case with raw bone. Nor is it as costly as the so-called "patented compounds."

And then there's Ferro Case—

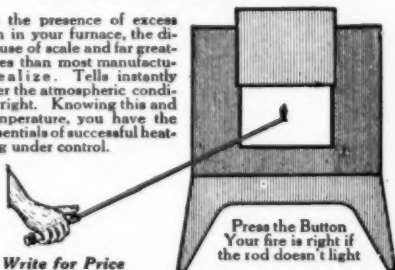
for case-hardening—scientifically prepared—that is much superior to cyanide, being more efficient, economical and *safe*. It is non-poisonous. Made in two grades. A trial order is all we ask.

C. G. BUCHANAN CHEMICAL CO., Cincinnati,
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Something New — And Good

The Bennett Detectorod

Shows the presence of excess oxygen in your furnace, the direct cause of scale and far greater losses than most manufacturers realize. Tells instantly whether the atmospheric condition is right. Knowing this and the temperature, you have the two essentials of successful heat-treating under control.



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Bennett Metal Treating Co.

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Also ask us about the Bennett Furnace



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*Babbit Lined Bearings
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BUSHINGS

for Products Of Super-Quality

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Give perfect satisfaction where others fail. State style and size in which you are interested, and we will send free samples and catalog.

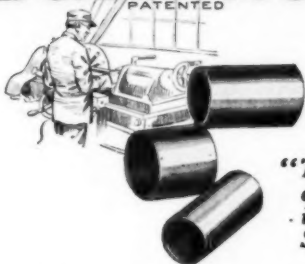
GITS BROS. MFG. CO
 1940 SO. KILBOURN AVE., CHICAGO



Style "H"

BUNTING BUSHINGS

PATENTED



**"They're
always
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Stock"**

At less than half of its former cost, in many cases, a completely machine finished cast Bunting Phosphor Bronze Bushing for practically any purpose and any machine, is now available immediately and at any time. Old customers of this company have seen their bills cut right in two by the application of Bunting's Standard Bronze Bushings carried in stock at all times at the factory and all branches.

The manufacture, maintenance and repair of all machinery moves to a new and lower cost level by the application of Standard Bushings, conceived and perfected and carried in stock by this great and experienced organization.

Manufacturers, maintenance and machine shopmen write, phone or call for list W.

Auto parts jobbers and auto repairmen learn of big new profits in automotive bushings by asking for list No. 16.

The Bunting Brass & Bronze Co.
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**“—saves
nearly half
the power!”**

The Record of the Rarefied

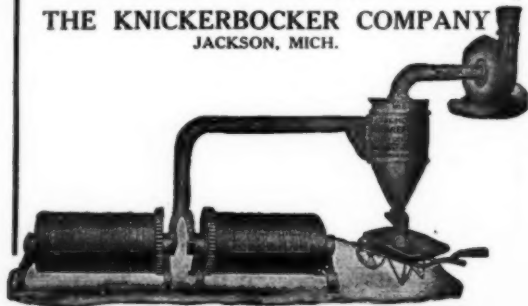
Somebody wrote to Knickerbocker:—

“This reduction in horse power is a great thing. Today we are operating the entire department with two 10s and one 5, making a total of 25 horse power, and before the installation of your “Rarefied” Dust Collectors we used 45 h. p. to do the same work.” *Name of customer on request.*

That’s the experience everywhere—in big plants and small ones, and with all kinds of heavy and cutting dust—the “Rarefied” saves power and repairs, assuring big economy and long life. It collects the dust and discharges it automatically before the air reaches the fan, which eliminates all cleaning out by hand.

Our explanatory Booklet is yours for the asking

THE KNICKERBOCKER COMPANY
JACKSON, MICH.



Second-Hand Machinery

Lists of Second-Hand Machinery, either for sale or wanted, set in uniform style, will be published under this heading at the rate of **50 cents a line**, across the page, each issue, plus **\$2.50** for name and address. Minimum charge, **\$5.00**. No display permitted in this department.

Write directly to those offering the machines for sale for prices and full descriptions. If what you seek is not listed, use the blank enclosed to make known your wants to the publisher, who will pass them along to all Machine Tool List advertisers.

FOR SALE BY

Knowlton Machine Co.,

Westbrook, Maine

COLD SAWS.

Several heavy duty cold saws—24" blade, 7½" capacity. Quality guaranteed. Get our circular and then make us an offer. This is perhaps the golden opportunity to purchase a modern—fast cutting—reliable—cold saw, at your own price.

FOR SALE BY

Fidelity Can Company,

600 S. Caroline St., Baltimore, Md.

Body maker, Slaysman, recently overhauled, guaranteed equal to new, all worn parts renewed.....\$1,300.
Can dryer, Slaysman, has never been used.....350.
Strip feed power presses, Bliss 119½, in Al c. ndition, (2), each.....600.

FOR SALE BY

Machinshop Equipment Corp'n, - 170 Oliver St., Boston 9, Mass.

Drilling machine, Garvin No. 0 duplex.
Lathe, 90" swing, 20' bed.
Lathes, trimming, small, (20).
Millers, type A Briggs, (20).
Millers, Whitney No. 6, hand, (20).
Miler, Garvin No. 1½ duplex.

FOR SALE BY

Botwinik Brothers,

21 Sylvan Ave., New Haven, Conn.

Grinder, Landis No. 4 cylindrical, complete, price.....\$ 1100.
Lathes, Hendey, q. c. geared, yoke head, taper attachment, etc., each.....500.
Miller, Brown & Sharpe No. 1 universal.....500.
Planers, Rowland 20"x20"x5', single head, metal working, each.....200.
Shapers, Stockbridge 16" crank, complete, brand new, each.....550.

FOR SALE BY

Badger-Packard Mchry. Co., 133-9 W. Water St., Milwaukee, Wis.

Boring mill, 34" Colburn.	Lathe, 30"x12' Wickes.
Brake, No. 135-36" Chgo., 3/16" cap.	Miller, No. 3 Becker-Brainard, vert.
Broachers, Nos. 2 & 3 La Pointe.	Miller, No. 7-H Becker, Lincoln type.
Centering mche., 2-spindle Whiton.	Planer, 36"x36"x9' Lodge & Davis.
Drill, No. 01. s. Garvin horizontal.	Planer, 36"x36"x14' Cincinnati.
Gear hobbbers, Nos. 1 & 3 Adams.	Press, No. 2-A Bliss, Stiles pattern.
Knife gr nders, 24", 30".	Press, No. 5 Toledo, o. b. 1.
Lathe, 14"x6' Mulliner.	Shear, 72" Niagara No. 172, 18 ga.
Lathe, 20"x8' Walcott.	Shear, 72" Stoll gap, ½" capacity.
Lathe, 24"x12' Lodge & Shipley.	Slotter, Pratt & Whitney, 2½" stroke.

Large stock of other equipment; send us your inquiries.

SECOND-HAND MACHINERY

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.
ENGINE LATHES.

- 12" Resik double end taper turning key lathe.
- 12"x 4' Porter-Cable, c. r., q. c. g., pan bed, (4).
- 12"x 5' LeBlond, c. r.
- 13"x 6' Seneca Falls, c. r.
- 14"x 6' Springfield, c. r., l.c.g.
- 14"x 6' Hendey, c. r. & t.a., q.c.g.
- 14"x 6' Star, c. r.
- 14"x 6' Hamilton.
- 14"x 6' Prybil, stud.
- 15"x 6' Sebastian, c. r., geared hd.

- 16"x 6' Reed, r. and f.
- 16"x 6' LeBlond, c. r. and t.a.
- 18"x 8' Chard, c. r., 3-st. cone, q.c.g.
- 18"x 8' Greaves & Klusman, c. r. & t. a., 3-step cone, q. c. g., pan bed.
- 18"x 10' American, c. r., 3 step cone, d.f. b.g., q.c.g.
- 20"x 8' LeBlond, hvy. duty, 3 step cone, d.f.b.g., q.c.g.
- 20"x 14' Monarch, c. r.
- 24"x 10' South Bend c. r. gap lathe.

TURRET LATHES AND SCREW MACHINES.

- 14" Lodge & Davis, plain head.
- 14" Warner & S., plain head (3).
- 24" Davis turret boring and chucking lathe, with forming rest.
- 22" Lodge & Shipley heavy duty turret boring lathe.
- 14" Acme screw mche., p. f. to tur.
- No. 2-A Warner & Swasey g. h. turret lathes, (2).
- No. 3-A Warner & Swasey g. h. turret lathe.
- 16" Warner & Swasey, plain head, with air chucks (3).

- 26" Gisholt heavy duty turret lathe.
- 2"x 24' Jones & Lamson g. h. flat turret lathe.
- No. 00 Brown & Sharpe auto, (3).
- No. 0 Brown & Sharpe auto. (5).
- No. 2 Brown & Sharpe auto. (3).
- 6 to 8" Model A Cleveland auto.
- No. 2 Warner & Swasey p. h. screw machines, a. c. & b. l., with p. f. to turret (4).
- No. 4 Bardons & Oliver g.j.h. turret screw machine.
- No. 24 New Britain auto. ck'g mch.

DRILLING MACHINES.

- Bench type drilling machine.
- Single spindle upright sensitive.
- No. 4 Avey high speed bench drill.
- 24" Superior sliding hd., b.g. & p.f.
- 20" W. F. & John Barnes, stationary head, b.g. and p. f. (2).

- 12" Rockford gr. driven bench drill.
- 20" Silver, sta. hd., b.g. and p.f.
- Champion sensitive bench drill.
- 25" W. F. & John Barnes, sliding head, b.g. and p.f.
- 20" Superior, sta. head, w. & t. fd.

MILLING MACHINES.

- No. 1 Rockford, hand, p. f.
- No. 1 U. S. hand miller.
- No. 7 Becker plain.
- No. 15 Garvin plain, b. g.
- No. 22 Garvin, vertical spindle.

- No. 3-A B. & S. universal.
- No. 14-B Kearney & Trecker, c. s. d. vertical.
- Potter & Johnston dbl. table automatic production miller.

GRINDERS.

- No. 1 Detroit centerless.
- No. 10 Cochrane-Bly auto. bench saw filing machine.
- No. 1 Brown & Sharpe, univ., (3).
- Type "DE" Hisey-Wolf internal.
- Gisholt tool grinder.
- No. 14-16 Besly, wet ring wheel.
- 6"x 15" Landis, pl., single pulley dr.
- No. 11 B. & S. plain grinders, (2).
- Capital internal grinders, (2).
- 2" Norton h. d. dry grinder.
- American drill grinder.

- No. 7 Diamond 'Gorton' dbl. end disc.
- Type WTA Cincinnati.
- 14" dia. spindle Webster & Perks, double end disc.
- Plain emery wh'lstand with column.
- No. 23 Whitney cylinder grinder.
- 10" St. Louis, self-contained t. & l. pulley drive.
- St. Louis self-contained grinder stands, 12" wheels (2).
- No. 1 Greenfield cutter and reamer, universal.

SHAPERS AND PLANERS.

- 16" Whipp plain crank shaper.
- 32"x 32"x 8' Pond planer.
- 22"x 22"x 5' Putnam planers (3).
- 42"x 48"x 10' Sellers planer.

- 36"x 36"x 12' Gray planer, hvy. patt'n.
- 20" Smith & Mills shaper, back gear crank.
- 20" Hendey shaper, friction.

METAL CUTTING TOOLS & SQUARING SHEARS.

- Excelsior power hack saw.
- 12" Burke metal cold saw.
- Higley cold saw.
- No. 14 Higley cold saw.
- No. 1 Racine power hack saw.

- No. 1 Marvel power hack saw.
- No. 1 Sterling power hack saw.
- Millers Falls power hack saw.
- 3" new Davis cutting-off machine.

SECOND-HAND MACHINERY

The Strong, Carlisle & Hammond Co.—Continued.

HAMMERS.

Coffman post pwr. dr. hammer 25 lbs.

Cady belt drop hammer, 100 lbs.

PUNCH PRESSES.

No. 264 Consolidated, geared, dbl. action cam drawing.

No. 18 Bliss plain inclinable power press.

No. 83 Bliss, straight side, geared.

P-3 Ferracute straight back.

GEAR CUTTERS

26" No. 3 Brown & Sharpe auto., (2).

No. 13 Brown & Sharpe auto., (2).

60" Eberhardt, spur.

MISCELLANEOUS.

Arbor press, Greenerd No. 4.

Keyseater, Mitts & Merrill No. 2.

Arbor press, Greenerd No. 3½.

Marking machine, power, Dwight

Bench tapper, Montgomery, ½" cap.

Slate No. 11.

Bench tapper, Hubbell, ½" cap.

Polishing lathes, Frankfort, plain bearing (4).

Boring mche., 23" swing, Star horiz.

Polishing lathes, City Machine Co.

Brake, 36" P. S. & W. cornice brake, 20 gauge capacity.

Pulley lathe, Streit.

Broaching machine, Lapointe No. 1½.

Splining mch., 2" Pratt & Whitney, double end.

Crane and hoist, Canton No. 3.

Straightening press, Geier No. 3.

Fender equip., Yoder, complete.

FOR SALE BY

E. L. Easley Machinery Co., 551-557 Washington Blvd., Chicago, Ill.

BORING MILLS.

42" Bullard and Gisholt.

96" King.

60" Bullard, Bickford and Betts.

SENSITIVE DRILLS.

1 spindle & 4 spindle Allen, h. s. b. b.

MISCELLANEOUS AND GEARED DRILLS.

24" Bickford, sliding head.

34" W. F. & J. Barnes, sliding hd.

24" Mechanics, sliding head.

24" Colburn heavy duty.

26" W. F. & J. Barnes, sliding hd.

12-spindle No. 3 Valley multiple.

28" Aurora, sliding head.

RADIAL DRILLS.

Strong, Carlisle & Hammond wall radial, diam. spindle 13/16".

3' Fosdick & Hol. plain.

2½' Fosdick & Hol. plain.

3½' Bickford plain.

5' Western full universal.

GEAR CUTTERS AND HOBBERS.

No. 1½ Bilton automatic, 4" cap.

No. 4 Adams-Farwell automatic.

No. 3 Cincinnati auto. spur, 26" x 10".

12" Gleason automatic.

30" x 10" Flather spur.

54" Gleason bevel.

No. 3 Adams-Farwell auto.

GRINDERS, MISCELLANEOUS.

No. 8 Besly double disc.

No. 3 plain Brown & Sharpe.

No. 10 Besly 18" double disc.

6" x 32" Norton plain.

20" Ransom double disc.

12" x 24" Modern plain cylinder.

No. 2 Detroit centerless.

No. 14 Brown & Sharpe plain.

No. 2 Garvin internal.

MILLERS.

No. 2-B Fox plain.

No. 2 LeBlond universal.

No. 4½ Becker-Brainard plain.

No. 3 B. & S. universal.

No. 5 Brown & Sharpe plain.

No. 4 B. & S. universal.

No. 2 Milwaukee universal.

PLANERS.

24" x 24" x 6' Hamilton.

36" x 36" x 16' Ohio.

32" x 32" x 8' Pond.

42" x 42" x 12' Hamilton.

36" x 36" x 8' Cincinnati.

MISCELLANEOUS.

Generator, 70 kw., 560 amp., 575 r. p. m., 110 v. d. c. Westinghouse.

Generator, 100 k. w., 800 amp., 650 r. p. m., 125 v. Triumph.

Slotter, 26" Niles geared.

Shafting, Pulleys, Hangers, Belting, etc.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company, 111 Broadway, New York

Located at our various factories

LATHES.

9"x18" taper, Porter-Cable.
14" & 16" x8' Whitcomb, q. c.
17" x 6' & 8' LeBlond, geared heads.
20" x10' LeBlond, q. c.
24" x24' Niles.
26" x10' Pond, 220 volt, d. c. motor.
28" x12' Pond.
32" x17' Pond, t. g.
36" x12' Pond, t. g., 220 v., d. c. mtr.
36" x17' Pond, taper, 220 v., d. c. mtr.
36" x20' Pond, 220 volts, d. c. motor.

36" x28' Bement, t. g.
42" x17' Pond, t. g., 220 v., d. c. mtr.
42" x20' Niles, t. g.
48" x24' Pond, geared hd., 220 volts, d. c. motor.
48" x30' Niles, t. g.
50" x17' Miles, old style.
54" x28' American, t. g., 220 volt, d. c. motor.
63" x40' Bement, t. g.

TURRET LATHES.

1" 2", 2 1/2" and 3" P. & W.
1 1/2" Southworth pl. hd. screw mche.
2" x24" W. & S. hollow hex.
2" x24" Jones & L., cone hd., old.

No. 6-A P. & J., 220 volts, d. c. motor.
21" and 28" Pond rigid turrets.
28" & 34" Gisholts.
32" Conradson-American turret.

PLANERS AND SHAPERS.

20" G. & E. shaper.
20" Stockbridge shaper.
20" x20" x 6' Bement.
24" x24" x 6' Powell.
24" x24" x 6', 8' and 10' Whitcomb-B.
26" x26" x 6' Gray.
30" x30" x 6' & 10' Pond, 2 heads.
30" x30" x 6' to 12' Pond, reversing motors.
36" x36" x10' to 16' Niles.
36" x36" x12' to 16' Pond, reversing motors.
36" x36" x24' Bement.
42" x42" x14' Bement.

42" x42" x26' Pond, reversing motor.
48" x48" x16' Pond, reversing motor.
48" x48" x20' Bement, belt.
54" x36" x10' Bement, belt.
50" x36" x22' Pond, reversing motor.
54" x54" x12' to 22' Pond, rev. motors.
60" x60" x14' to 24' Niles, belt.
72" x72" x12' Bement, belt.
72" x60" x14' Bement, reversing mtr.
72" x72" x20' Ridgway, forge, reversing motor.
76" x72" x26' Pond, reversing motor.
10' x10' x36' Betts, 220 volt, d. c. motor through belts.

MILLERS AND GEAR CUTTERS.

No. 2-A Brown & Sharpe universal.
No. 2-B single pulley pl., B. & S.
No. 4 plain, cone pulley, LeBlond.
No. 4 plain, cone pulley, B. & S.
No. 5 plain, cone pulley, B. & S.
6x48 to 132" P. & W. old style thread millers.
11" No. 5-A Lees-Bradner gear generator.

15" Gleason bevel gear generator.
No. 5 vertical, cone pulley, B. & S.
16" Cincinnati gear hobber (new).
36" to 60" B. & S. spur gear cutters.
No. 3-36" Newark, 220 v., d. c. mtr.
No. 4-48" Newark, 220 v., d. c. mtr.
No. 55-36" Newark heavy pinion, 220 volt, d. c. motor.

DRILLING MACHINES.

1-spindle Pierle, b. b.
32" Aurora, tapping attachment.
40" Aurora, tapping attachment.
4" Bickford speed box radial.
5" Niles full universal, speed box.

5" Ridgway, 220 volt, d. c. motor.
6" Pond, 220 volt, d. c. motor.
6" Niles full universal, speed box.
12-spindle No. 13 P. & W. multiple.

GRINDERS.

Mummert-Dixon port. radial grinder, 220 volt, d. c. motor.
18" Gorton disc grinder.
No. 3 B. & S. universal.
12" x36" Cincinnati, plain.

No. 11 B. & S. internal.
P. & W. old style vertical.
18x6 Reid surface No. 2.
P. & W. thread miller cutter grinder.

BORING MACHINES.

36"—44" Niles side head mill.
51" Niles mill, with turret head.
60" Bement b. & t. mill.
72" Ridgway, 220 volt, d. c. motor.
10' Niles, 220 volt, d. c. motor.

2 1/2" and 3" Lucas horizontal.
4 1/2, 5 and 6 1/2" Niles floor borers.
2 1/2" to 4 1/2" horizontal boring and drilling machines.

SECOND-HAND MACHINERY

Niles-Bement-Pond Co.,—Continued

MISCELLANEOUS.

Air compressors, 324' and 835', steam drive.
Blow fan, No. 70 Buffalo.
Crane, 3-ton, 19' span, Niles 3-motor, 220 volt, d. c.
Crane, 20-ton, 48' span, Sellers, 220 volt, d. c.
Engines, 125, 150 and 200 h. p. Philadelphia Corliss.
Generator set, 100 k. w., 22 volt, d. c., direct connected to engine.
Hammer, 800 lbs. Bement, bd. drop.

Hammer, 80 lbs. Bradley, cushion helve.
Heater, 600 h.p. Cochrane, fd. water.
Hot blast apparatus, 72" fan, steam engine drive.
Pumps, 200 to 500 gal., steam drive.
Saw, 6x6 Racine, 220 volt, d. c.
Saw, 5" Nutter-Barnes.
Saw, 7" capacity, Espen-Lucas.
Slotter, 6" Bement.
Slotter, 18" Putnam, 220 volt, d. c. motor.

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

"Machinery is our Middle Name"

Boring machine, Rockford horiz.
Bulldozer, W. & W. No. 24.
Cut-off mchs., Davis 6", H. & R. 4".
Drill presses, 10" to 36" single and multiple spindle, 8 large slid. hd.
Gear hobbers, No. 3 Farwell and Garvin double spindle sprocket.
Gear shaper, 36" Fellows.
Grinder, Besly 54" horizontal disc.
Grinders, cylindrical, surface, knife, univ., centerless, emery stands.
Lathes, large stock new and good used, all sizes, q. c. g. & standard.
Keyseaters, La Pointe, Davis No. 2.

Milling machines: Bristol and U. S. hand; LeBlond No. 1 1/2 univ.; Cin'ti No. 2 plain; Kempsmith No. 2; Becker and Hendey Lincoln; Becker s.d. vert.; Briggs B72" trav.
Planers, 24"x24"x6" Ohio and Amer.
Presses, Niagara, Swaine, Emco, o. b. i. & straight back & kick.
Rivet spinners, vertical and horiz.
Screw machines, Namco 4-spindle 1", P. & W. hd., Gridley auto. 4 sp. 2 1/2".
Shapers, 16 & 20" Cincinnati b. g.
Tinner's tools, square shears, etc.
Wood-Work'g & Sheet Metal Tools.

FOR SALE BY

The O'Brien Machinery Co.,

113 N. Third St., Philadelphia, Pa.

Bolt cutters, 4" Acme, (2).
Bolt cutter, 1" Acme.
Drill, Avey Hi-speed sensitive with motor attached.
Drills, Moline heavy duty hog, (2).
Drills, Sipp single spindle (3).
Drill, 36" Prentiss.
Gear cutter, 36" Gould & Eberhardt.
Grinder, 6"x32" Norton pl. grinder.
Grinder, No. 1 Norton universal.
Grinder, No. 2 Norton universal.
Grinder, No. 2 Acme univ. tool & c.
Grinder, No. 14 Besly disc, with press.
Grinders, Wilmarth & Morman hand feed surface grinders, (2).
Hammer, 40 lbs. Williams-White Yeakley, belt drive.
Hammer, 650 lbs. Williams-W. Y.
Lathe, 8"x108" Fitchburg Lo-Swing.
Lathe, 16"x8" Rahn-Larmon.
Lathe, 18"x9" Lehman.
Lathe, 20"x9" Lehman.
Lathe, 20"x12" Monarch.
Lathe, 20"x14" Powell.
Lathe, 27"x10" S. & B., heavy duty.
Miller, No. 25 Bilton plain.
Miller, No. 34 Fox.

Nut tapper, 6-sp. 1 1/2" Acme semi-auto.
Pipe machine, 4" Oster.
Pipe mche., 4" Oster, motor driven.
Pipe mch., 4" Jarecki, motor driven.
Pipe machine, 6" Jarecki, belt drive.
Pipe machine, 2" Oster.
Pipe machine, 6" Curtis & Curtis.
Planer, 36"x36"x12" Powell, 4 hds.
Planer, 38"x36"x12" Powell, 2 hds.
Planer, 50"x50"x18" Betts.
Presses, Nos. 18, 19 and 20 Bliss.
Presses, approximately 50, assorted sizes, Waterbury-Farrell Foundry, weights approx. 2,000 to 5,000 lbs.
Presses, Toledo No. 53 straight sided power, 3 1/2" stroke, (7).
Riveter, 8"x8" Vulcan.
Saw, 6" Nutter & Barnes circular.
Screw machines, No. 2 Brown & Sharpe, wire feed.
Shapers, 20", 16" and 14" Holling'h.
Shapers, 24", 20" and 16" Ohio.
Turret lathe, No. 64 Bardon & Oliver, wire feed, cabinet base.
Turret lathes, No. 12 1/2 G Garvin, 2" wire feed capacity (1).

SECOND-HAND MACHINERY

FOR SALE BY

A. M. Stoehr Machinery Co., 844-846 North Wells St., Chicago, Ill.

Blue printing and drying machine, continuous, 42" cap., 220 volt, d. c.
Bolt cutter and tapper, $\frac{1}{2}$ " cap.
Boring mills, 28 & 40" Bullard.
Drill presses, new, 29", back gear, power feed, each \$120.
Drill presses, 1 & 3 spindle H. & W.
Gear cutter, Belton No. 10.
Gear cutter, 60" Gould & E.
Grinder, Heald, piston ring, mag. ck.
Grinder, 3x18 Norton.
Grinder, No. 75 Heald.
Grinder, 12x32 Landis.
Hammers, 500 lb. Beaudry, & others.
Lathes, all sizes.

Milling machines, Nos. 1 and 2 universal, also 15 other sizes plain.
Pipe machine, 6" Jarecki, mtr. dr.
Presses, No. 4 Robinson, Nos. 3A & 4 Am. Can, Nos. 30 & 45 Crosby.
Punch & shear, No. 13 W. & W. Co., 38" throat, arct. jaw, 14" in 1".
Saw, metal band.
Screw mchs., No. 53 Acme auto., 18" and 2" Cleveland sgle. spdl., 24" Gridley.
Shears, bar splitting and square.
Tapping machine, Tuttle, $\frac{1}{4}$ " cap.
Turret lathes, No. 5 B. & O., 16" W. & S., 18" P. & W. geared hd.

FOR SALE BY

A. D. White Machinery Co., 108-114 N. Jefferson St., Chicago

ENGINE LATHES.

18"x 7' Chard, d. b. g., p. c.
18"x 9' Bell, d. b. g., p. c.
20"x 8' Hamilton, d. b. g., s. q. c.
20"x 8' Lodge & Shipley, grd. hd.
20"x 8' Reed, s. b. g., p. c.

20"x 8' Reed, motor driven.
22"x10' Davis, d. b. g., q. c.
32"x10' Pond, s. b. g., p. c.
34"x10' Putnam, s. p. g., p. c.
38"x14' Fifield, s. b. g., p. c.

MILLING MACHINES.

No. 0 Rockford, plain.
No. 25 Becker, horizontal.

No. 1 Newton slab.
Type "A" Briggs (2).

DRILL PRESSES.

20" Mechanics, friction.
26" Barnes, sliding head.
28" Barnes, sliding head.
26" Aurora, sliding head.
36" Reed Prentice radial.

2 spindle Guarantee, h.s., b. b.
4 spindle Reed sensitive, $\frac{1}{4}$ " cap.
24" No. 24 Foote-Burt heavy duty.
2 spindle 24" Barnes, all grd. gang.

PUNCH PRESSES.

No. 8 & No. 11 Bliss auto. button presses.
600 ton Amer. Can toggle emb.

New Swaine o. b. i. presses Nos. 27, 29, 31, 33, 35 and 37.

TURRET LATHES AND SCREW MACHINES.

No. 3 Foster, plain head.
20"x5' Bridgeport, (2).
20"x8' Fay & Scott universal.
22"x5' Reed.
21" and 24" Gisholts.
3x36" Jones & Lamson.
14"x16" Milbolland.
11" Biggs (2).
No. 1 Garvin, hand, (4).
No. 1 B. & S. auto. $\frac{1}{4}$ " (2).

No. 3 Stecher, hand, (4).
16"x5' Drees Fox.
18"x6' American Fox.
18"x6' Springfield Fox.
7/16" Cleveland, ratchet feed.
1" Cleveland, semi-auto.
1" Cleveland, friction.
1" Cleveland, jigger.
1" Hartford, (2).
1" Cleveland, jigger.

BOLT CUTTERS AND PIPE MACHINES.

14" Acme, double head.
34" Acme single head, (2).
4" Acme single head.

4" Saunders.
8" Eaton, Cole & Burnham.

MISCELLANEOUS.

Blower, No. 7 Sturtevant, high press.
Boring mch., 24" bar, Binsse horiz.
Gang splitter, takes 21" sheets.
Gang splitter, takes 29" sheet.
Gas engine, 35 h. p. Columbus.
Grinders, No. 2 Woods tool & cutter.
Grinder, No. 2 Oesterlein tool & cut.
Grinder, 12x32 Landis plain.
Grinder, Springfield, 2-wheel wet.

Grinder, Leland & F., wet.
Keyseater, No. 2 Mitts & Merrill.
Planer, 30"x30"x10' Pond, 1 head.
Profiler, 2 spindle Putnam.
Riveter, $\frac{1}{4}$ " Shuster.
Saw, No. 54 Nutter-Barnes.
Screw slotter, Garvin hor. 3/16 to $\frac{1}{4}$ ".
Tapper, No. 2 Garvin, auto.

SECOND-HAND MACHINERY

FOR SALE BY

Cole Brothers,

Chilhowie, Virginia

OIL BURNING ENGINES.

We have a limited number of 15 and 20 h. p. Cushman two cylinder oil burning engines to offer at bargain prices. Write for prices, etc.

FOR SALE BY

Frank Toomey, Inc.,

127-131 N. Third St., Philadelphia, Pa.

New and Good Used Machine Tools at extremely low prices.

LATHES AND TURRET LATHES

- 14"x6', 8' & 10' Sidney, q. c., d. b. g., engine lathe, med. pattern, new.
- 4 spindle No. 24 Gridley, used.
- No. 44 Bardons & Oliver screw machine, wire feed, used.
- 6-A Potter & Johnston automatic turret lathe, used.
- No. 6 Warner & Swasey, w. f., used.
- 34x36 Acme comb. flat turret lathe, 21" Gisholt turret lathe, used.
- 21" Gisholt tur. lathe, 44" spl., used.
- 2x24 Jones & Lamson, both bar and chuck equipment, (2).
- 64x38' Putnam, triple geared, motor drive, taper attachment.

- 18x8 Walcott, q. c., c. b. g., (2).
- 15, 17 & 19 hvy. pattern Sidney lathe, q. c., d. b. g., any length bed, new.
- 1" cap. Smurr & Kamen, w. fd., used.
- No. 3 Bardons & Oliver wire feed screw machine, used.
- 13" Garvin turret, wire feed.
- No. 52 Acme screw machine, used.
- 34x36 Greenlee.
- 22x8' Bullard turret lathe, all power feeds and taper attachment, used.
- 18x8 Whitcomb-Blaisdell, q. c., d. b. g., pan bed, oil pump, used, (10).
- 34x24 Putnam, triple grd., arranged for motor drive, taper attachment.

SHAPERS AND PLANERS.

- 16", 20", 24" Steptoe b. g. shapers, new.
- 16" Davis, s. g., new.
- 24" Morton draw-cut shaper.
- 36x36x10' Cincinnati planer, 3 heads, motor.
- 1-16 Whipp, s. g., new.
- 44x44x12' Cleveland opsided planer, 2 heads on rail, one side head, motor drive, used.

- 36"x36"x14' Ohio planer, heavy pattern, 4 heads, belt drive, used.
- 20" Cincinnati b. g. shaper, used.
- 30"x30"x10' Cleveland opsided planer, 1 hd. cross rail, 1 side hd., lengthened for 36" capacity, motor drive, used.
- 24"x24"x6' Pease planer, 1 hd., used.
- 24"x24"x8' Hendey planer, 1 hd., used.

GRINDERS.

- 14x96 Norton plain, standard equipment, used.
- 10x36 Norton plain, standard equipment, used.
- No. 60 Heald internal, standard equipment, used, (2).
- Heald internal grinder, used.
- No. 2 Brown & Sharpe univ., used.

- No. 4 Landis univ., 12x66 standard equipment.
- No. 1 LeBlond univ. cutter, standard equipment, used.
- O. S. Walker No. 24 surface, magnetic chuck, used.
- Double and single end floor grinders, all sizes.

VERTICAL AND HORIZONTAL BORING MILLS.

- 42" Baush vert. mills, hvy. pattern, 2 hds., arranged for motor drive, used, (2).
- 3" bar univ. horiz. boring mill, belt drive, standard equipment.
- 42" Bullard vert. boring mill, 2 hds., arranged for motor drive.

- New Rockford horiz. boring, drilling and tapping mche., belt drive.
- sgl. pulley gear box drive, 24" bar.
- No. 1 Cleveland 24" bar hor. boring mills, constant speed, sgl. pulley drive, (2).

MILLING MACHINES.

- No. 2-A Brown & Sharpe universal, constant speed dr., standard equipment, used.
- No. 4 Cincinnati pl., belt drive, used.
- No. 2 Brown & Sharpe vertical, belt drive, used, (2).
- No. 2 LeBlond plain, used, (2).

- No. 3 Cincinnati univ., belt drive, standard equipment, used.
- No. 4 Brown & Sharpe plain, belt drive, used.
- No. 1 Cleveland universal (2).
- No. 22 Garvin vertical, used.

RADIAL DRILLS.

- 5' Baush universal motor drive.
- 7' Fosdick plain, belt drive.

- 14" to 36" stationary hd. and sliding head drills, new and used.

Send for Stock List just issued.

SECOND-HAND MACHINERY

FOR SALE BY

J. C. Marr Machinery Co.,

Air compressor, 3x4 and 5x6" vert.
Blowers, Nos. X and 1/2 Garden City.
Blower, No. 3, Buffalo pres.
Bolt cutter, 1" Acme, triple head,
arranged for motor.
Bolt pointer, 1" Acme, belt driven.
Bolt cutter, Reliance 1 1/2", sgl. hd.
Boring mill, 90" Niles, 2 swivel hds.
Brake, 8" Robinson, pwr. dr., 3/16" cap.
Drill, 20" Rockford, bk. gr., pr. feed.
Drill, 26" upright, bk. gr., pwr. feed.
Grinder, Diamond auto, surface.
Hoist, 1 ton, spur gr. and trolley.
Lathes, 11"x4' & 13"x5' speed, c.s.
Lathe, 16"x 6' Flatner, taper attach.
Lathe, 16"x6' Cincinnati, semi q.c.g.
Lathe, 18"x8' Bradford, pl. ch. gr.
Lathe, 23"x12' Draper, pl. ch. gear.
Lathe, 24"x16' L. & S., q.c.g., t. att.
Lathe, 26"x12' Putnam, semi q.c., t.a.
Lathe, 40"x16' Fifield, c. r.

127 Water St., Pittsburgh, Pa.

Lathe, No. 3 Bardons & O., tur., f.b.g.
Miller, No. 1 Burke hand, vise, stand
Miller, No. 3 B. & S. pl. arbor. c. s.
Planer, 24x24x6' Gray, 1 head, c. s.
Press, No. 2 1/2 Ferracute f. w., 1 1/2" str.
Press, No. 4 A Bliss Stiles, adjust-
able bed, 4" stroke.
Press, Bliss No. 87 foot lever; No. 5
knuckle joint.
Press, Bliss No. 18 o.b.i.pl. flywheel.
Press, Stiles & Parker, 1 1/2" stroke,
plain f. w.
Press, No. 58 Bliss reduc'g, 3 1/2" str.
Punch & shear, Cleveland, 7" thrt.,
1 1/2"
Punch, Clough, hand power, 15"
throat, 1 1/2"x4"
Riveter, Shuater 1/2" rotary blow.
Shaper, 16" American, bk. gr. crank.
Shear, Niagara 7' ft. power, squar'g.
Shear, Niagara alligator, cap. 5x3 1/2'.

FOR SALE BY

Tubor, Velick & Co., Inc., - Lake & Desplaines Sts., Chicago, Ill.

Telephone: Monroe 4199

New and Used Machines.

PUNCH PRESSES.

No. 60 1/2 Bliss, (4).
No. 4 Verdin Kappes, b. g.
No. 33 Consolidated.
No. 3 Am. Can, dbl action (2).
No. 35 Niagara.
No. 15 Torris Wold.
No. 15 Waterbury-F. kick pr., (44).
No. 3 American Can (3).

DRILL PRESSES.

20" Canedy-Otto, (20).
20" Barnes, (20).
20" sliding hd. (3), different makes.
20" to 30" Silver and Rockford (20).
Bench drills, with chucks (25).
4' radial, Niles.
4' radial, Mueller.

MILLING MACHINES.

No. 1B Milwaukee universal.
Fox millers, power feed, (15).
Bristol millers, plain, (15).
No. 35 Cincinnati universal.

LATHES.

Bench lathes, (20).
10"x 4' Myers.
16"x 8' Robinson.
16"x 6' Rahn-Carpenter.
16"x 8' Canedy-Otto.
16"x10' Hamilton.
18"x 8' Bradford.
18"x 8' Sidney.
18"x10' American, (2).
20"x14' LeBlond.
22"x10' Cisco, quick change.
22"x18' Wickes.
Low-swing lathes, Fitchburg, (3).
Porter-Cable: Dalton Six, bench;
No. 17 LeBlond, q. c.

GRINDERS.

No. 14 Besly, disc, (3).
No. 15 Besly, disc.

SCREW MACHINES.

No. 3 Smurr & Kamen, p. f. (8).

MISCELLANEOUS.

Blowers, No. 5 Root, complete with
75 h. p., a. c. slip-ring motors, 600
r. p. m., (2).
Electric pumps, Yeomans Bros.,
direct driven, with 15-20-25 a. c.
motors, (4).
Gear hobber, No. 3 Barber-Colman.
Jointers, 12" and 16".
Motors, all sizes, a. c. and d. c.
Paper box stitcher, Latham No. 2, new
Paper balers, (100).
Planer, 36"x26"x14' Niles.
Shaper, 24" Milwaukee.
Shear, rotary, 60" Pettingell.
Shear, 11' power square.
Trucks, 3 lifting.
Leather belting, Pulleys, shafting and hangers.

SECOND-HAND MACHINERY

FOR SALE BY

J. L. Lucas & Son, Inc., - No. 3 Fox St., Bridgeport, Conn.

CAM DRAWING PRESS

One No. 1½ Bliss cam drawing double action press, in very excellent condition; can be seen set up in Bridgeport. Price,.....\$1,250.

FOR SALE BY

Cyril J. Bath & Co., 1603 St. Clair Ave., N. E., Cleveland, O.

BOLT CUTTERS AND TAPPERS.

½" capacity Landis, excellent, (2).

DRILLING MACHINES.

20" Silver, whl. and lever feed; new.

20" Silver, back grd., power, wheel and lever feed; new.

20" Ryerson back geared.

24" Cincinnati-Bickford, sl. hd., with and without tapping attach., (4).

24" Aurora, sliding head, gear feed, with tapping head, (4).

28" Cincinnati-Bickford, sliding hd. and tapper, (4).

Bausch 12-spindle, ½" cap., square hd.

26" Cincinnati.

BORING MILLS.

No. 21 Lucas horizontal boring mill, 2½ and ½" spindles; excellent.

GRINDERS.

No. 11 B. & S. pl., cap. 5x30"; good.

Landis 10x30", plain, with internal grinding attachment; good.

Yankee twist drill; good.

New Yankee drill 2½".

18" Bryant int.; excellent shape.

16x48 Cincinnati universal; excellent condition.

No. 3 Brown & Sharpe universal, complete, excellent.

LATHES.

16"x 6' LeBlond, q. c. g., comp. rest, taper attach.; good.

18"x 9' Lehmann, q. c. g., comp. rest, taper attach.; new.

20"x10' Wickes, q. c. g., compound rest; new.

12x48" Blount spd., good, chuck, etc.

14"x 6' LeBlond, c. r., belt fd.; good.

16"x 8' LeBlond, comp. rest, q. c. g. and chuck; good.

16"x 6' American, all geared head, motor drive, late model; good.

20"x10' American, q. c. g., dbl. b. g., heavy model; excellent.

MILLERS.

No. 2-A Brown & Sharpe universal, gear drive and feed.

No. 3 Brown & Sharpe plain, cone drive, gear feed; good.

No. 3-B heavy Brown & Sharpe plain, single pulley, excellent.

No. 12 B. & S. Lincoln; good.

No. 7-H Becker, Lincoln; fair.

Type A Briggs Lincoln; excellent.

No. 2 Brown & Sharpe vertical; fair.

No. 1½-B Milwaukee univ., single pulley dr. pwr. fds. in all directions, div. hd., vert. att.; very good.

20"x7½"x18" Osterlein pl.; old, fair.

24"x7½"x18" Osterlein plain, 10" dividing head; good.

Rockford pwr. fd. miller, tbl. 30"7½".

Burke milling mch., practically new.

PLANERS.

24"x24"x6' Gray, old but good.

24"x24"x6' Liberty, new, 1 head.

Lee 16"x36" planer.

SHAPERS AND SLOTS.

16" Cincinnati b. g. crank, new.

20" Whipp b. g. crank, new.

20" Ohio b. g. crank, good.

16" Betts crank slotter, good.

TURRET LATHES AND SCREW MACHINES.

24" Gisholt turret, 6½" hole, good.

No. 4 B. & O., pwr. fd. to turret and slide, large assortment tools and collets; very good, (3).

21" Gisholt turret, 3½" hole, good.

No. 53 National Acme standard automatics, ½" cap., with collets and tools; in good condition, (9).

MISCELLANEOUS.

Air compressor and tank.

Arbor press, No. 5 Greenard geared, very good.

Arbor press, floor type.

Band saw, metal, Klemm, good.

Centering mche., Cadillac; excellent.

Centering mche., Whiton; good.

Cold saw, No. 11½ Higley, 4"rd. fair.

Draw benches, No. 2 W.-F., extra cap. 20', excellent, 60,000 lbs. cap.

Crankshafts for No. 59 Toledo and No. 77½ Bliss presses.

Hammer, Pettengill power, small forming.

Keyseater, No. 1 Baker, good.

Press, power, 15-ton Lucas forcing, excellent.

Welder, Federal spl., spot, like new.

Twist drills, reamers, milling cutters, etc.

SECOND-HAND MACHINERY

FOR SALE BY

Lucas & Son, Inc.,

Bridgeport, Conn.

SCREW-CUTTING LATHE.

One 24"x10' Reed screw-cutting lathe, hollow spindle, compound rest, equipment. Price.....\$ 350.

FOR SALE BY

H. D. Warner,

26 High St., Hartford, Conn.

Blower, Garden City No. 3, with tank.....	\$ 100.	Pipe threading and cutting-off machine, 6" B. & K.....	\$ 700.
Chucking machines, No. 6-A Potter & Johnston, (4), each.....	550.	Pipe threading and cutting-off mche., 12" to 18" Standard Engineering Co.....	1,250.
Grinder, B. & S. No. 3 sur., Grinders, Bryant ck., (2), each.....	450.	Press, No. 5 Farrel Foundry, Press, Perkins dbl. action cam, Screw mches., 3 1/2" Cleveland automatic (2), each.....	200.
Lathe, 15"x6' Reed.....	200.	Screw machines, 3 1/2" Gridley automatic (6), each.....	600.
Lathes, tilted tur., for chucking (3), each.....	150.	Screw machines, 9/16" Acme automatic (4), each.....	200.
Millers, No. 3 Becker pl., (2) ea. Millers, Lincoln, P. & W. No. 12 (10), each.....	250.	Screw mche., Acme No. 53 auto. Screw mche., Acme No. 54 auto. Shaper, 16" Perkins.....	400.
Millers, Sellers, Lincoln type (6), each.....	100.	Swaging mche., No. 3 1/2 Dayton.....	500.
Miller, No. 7-H Becker, Lincoln type.....	250.		
Planer, 24"x24"x6'.....	250.		
500 Used American Steel Pulleys, all sizes.			

Let me know your requirements. What have you for sale?

FOR SALE BY

J. L. Lucas & Son Inc.,

3 Fox St., Bridgeport, Conn.

LATHES.

We have a surplus of Lathes to sell. Pick out one and send 1/3 deposit.

Lucas will not disappoint you.

American and P. & W. bench lathes with equipment, (2).....	\$ 125.
B-4 Dalton cabinet legs, draw-in, grinding attachment, like new.....	175.
12x 5 Hendey rebuilt, taper and draw-in.....	350.
14x 6 Monarch rebuilt, quick change.....	350.
14x 6 South Bend, with extra turret, compound rest.....	225.
14x 7 Hendey, taper attachment, quick change.....	475.
14x 5 Hendey, taper draw-in, quick change, yoke head, rebuilt.....	650.
16x 6 Lodge & Shipley, motor drive, taper, draw-in, grd. hd., 90% new..	850.
16x 8 LeBlond, taper attachment, nice condition.....	275.
16x 6 Reed Prentice stud lathes (2), each.....	175.
16x12 Bradford lathe, compound and taper.....	325.
16x 8 Hendey, loose change gears, compound and taper, rebuilt.....	325.
16x 6 Cisco, quick change.....	300.
18x 8 Cisco, quick change, collets, excellent shape.....	475.
20x 8 Cisco, quick change, double back geared.....	525.
18x 8 Monarch, quick change, raised to 24", excellent shape.....	400.
19x14 Pond, solid spindle, compound rest.....	400.
20x10 Bradford, compound rest, very fine shape.....	400.
24x10 Reed, compound rest, nice condition, loose change gears.....	475.
22x 8 Pratt & Whitney, compound rest.....	325.
26x14 Bridgeford replanned, quick change, 8' c-c, comp. rest, 95% new...	1050.
26x16 Pond, solid spindle, 10' c-c, compound rest.....	800.
26x25 Putnam semi-quick change, compound rest, 18' c-c.....	1250.
29x10 Niles-Bement Pond, quick change, double geared, rebuilt.....	750.
32x24 Pond, compound rest, 10' c-c.....	600.
40x25 New Haven, compound rest.....	850.
50x16 Pond lathe, face plate drive, 8'-6" c-c.....	1350.

As a special inducement will send a fitted chuck with the lathe you want.

Don't wait long.

SECOND-HAND MACHINERY

FOR SALE BY

D. E. Rowlingson, 240 Jay St., P. O. Box 265, Utica, N. Y.

Iron Working Tools at net cash prices to close out.

Drills, bench, Burke, new, $\frac{3}{4}$ h. p. motor driven with Jacobs chuck, (2) $\$$ 50.	
Drill, bench, 10" Burke, belt driven, new, with Jacobs chuck	25.
Emery stand, $\frac{1}{2}$ " Myers, double end on pedestal	20.
Engine lathe, 13"x64" Pratt & W., taper attach., b. g., c. s.	175.
Lathe, 26"x20"; set 2" and 6" blocks to make 30" and 36"	600.
Motor, 5 h. p. Cronk, 2 ph., 60 cycle, 220 v., new bearing	60.
Planer, 26"x26"x10" Powell, A-1 order. Bargain	650.

All the above machines are in good operating order and ready for immediate shipment. Write me about your needs in new or used machinery.

FOR SALE BY

Herman L. Winterer, 943-53 N. Front St., Philadelphia, Pa.

LATHES.

43"x17" $\frac{1}{4}$ " Bement-Miles.	21" $\frac{1}{2}$ "x8" LeBlond.
42"x16" Niles taper att.	20"x8"6" Walcott, d. b. g., q. c. g., (2).
37"x14" Johnson d. b. g., q. c. f., t. a.	20"x8" Whitcomb Blaisdell, q. c. g.
32"x12" Pittsburgh, heavy duty, q. c. g.	20"x10"6" American pat. hd., q. c. g.
26"x16"6" American, q. c. g.	18"x8" Prentice, q. c. g.
27"x12" Bullard.	19"x10" Draper, patent head.
28"x11" Wickes, q. c. g.	18"x7" Chard, d. b. g., semi q. c. g.
23"x10" Niles, q. c. g.	18"x6" to 8" lathes, (6).
25"x14" Hendey, q. c. g., taper attach-	16" Lathes, (10).
ment, oil pan, (2).	And many others.
24"x14" Porter.	

TURRET LATHES.

3 $\frac{1}{2}$ x28" Pond, triangle.	16"x6" Johnson, back grd.
3x36" Pratt & Whitney, hollow hex.	No. 5 Bardons & Oliver, back grd.
20"x7"6" Pratt & Whitney, back grd.	No. 3 Bardons & Oliver back grd.
19"x7" Fay & Scott, back grd.	14 $\frac{1}{2}$ "x5"3" Pratt & Whitney, (2).
No. 22 $\frac{1}{2}$ Garvin Monitor.	No. 3 Foster Kimball.
17"x6" Warner & S., bk. grd., (2).	

DRILL PRESSES.

40" Barnes horizontal radials, (2).	20" Champion, new, (6).
36" Bickford radial, circular base,	Plain drills, all sizes.
motor driven.	Drill presses, assorted sizes.
14" 6-spindle Allen sensitive.	

MILLING MACHINES.

38"x6" Ingersoll horizontal slab.	No. 2B heavy, Brown & Sharpe,
No. 5 Cincinnati, table 9 $\frac{1}{2}$ x50 $\frac{1}{2}$ ".	single belt drive, q. c. g.
No. 15 Garvin, table 12x42".	Whitney hand miller.
No. 3 Becker Brainard, table 12x40".	No. 27 Industrial Works, Lincoln
No. 3 Hendey-Norton, q. c. g.	type, table, 7x27".
No. 0Y Brown & Sharpe plain, (2).	Gooley & Edlund, 7 $\frac{1}{2}$ x46" table.

PLANERS AND SHAPERS.

48"x48"x16" Pond planer, 3 heads.	26" Cincinnati.
30"x30"x8" Putnam planer.	18" double head, 16" bed Bement
26 $\frac{1}{2}$ "x26"x6" Hendey planer.	shaper, motor driven.
48" Morton draw-cut shaper.	14" Warren shaper.
39" Pedrick & Ayer, open side.	

MISCELLANEOUS.

Boring mill, 100" Sellers, vert. dbl. hd.	Hammers, 60 lb. Bellefonte upright; 2.
Boring mill, car wheel, 40" Newton.	Keyseaters, 18" stroke Morton, (2).
Boring, drilling and milling machine,	Keyser, Mitts & Merrill No. 5.
17 $\frac{1}{2}$ " Bement Niles horizontal.	Pipe machine, 8" Eaton, Cole & B.
Die sinking mche., Keller, motor dr.	Punch presses, all sizes, (55).
Grinder, 13 $\frac{1}{2}$ "x5" Landis universal.	Punch & shear, Industrial Wks. d.e.,
Grinder, disc, No. 17 Bes'y.	capacity $\frac{1}{2}$ " in $\frac{1}{4}$ " squaring $\frac{1}{4}$ "x6".
Grinder, No. 7 $\frac{1}{2}$ Gardner, motor	Slotter, Newton, 18"; cir. table.
driven disc.	Tooth round'g mch., Schuchardt & S.
Grinder, disc, No. 1 Besly.	

Large assortment of General Machinery. Send for Complete List.

SECOND-HAND MACHINERY

FOR SALE BY

The H. A. Smith Mch. Co., - 501 E. Water St., Syracuse, N. Y.

Air compressor, 10x8 Ingersoll-R. class ERI.
Furnace, Stewart No. 14, oven.
Grinder, disc, No. 18 Gardener patternmakers.
Grinders, pl., No. 11 B. & S., single pulley drive, (4).
Grinder, pl., No. 11 B. & S. overh'd c.s.
Grinder, univ. tool & cut., W. & M. Grinder, universal tool and cutter, No. 1 Brown & Sharpe.
Grinder, No. 13 Brown & Sharpe.
Grinder, 84" Diamond, hvy. duty face, 30 h. p. motor, 99% new.
Lathe, 13x8 Seneca Falls.
Lathe, 16x8 Walcott, d.b.g., q.c.
Lathe, 16x10 Blount speed.
Lathe, 20x10 Monarch, q. c. g.
Lathe, 24x10 American, c. r., t. a.
Miller, No. 2-B Hendey univ.
Miller, No. 3 Kempsmith pl., vert. att.
Presses, No. 2 Rockford inc. fly wheel, (2).
Profiler, No. 4 Garvin, rotary table, 99% new.

Slightly used Machine Tools.

Miller, No. 4 Cinti. pl., sgl. pulley dr.
Presses, power bench, (10), No. 1 Atlas, 14" stroke, bed surface 74x10. Price each, \$80.
Riveter, No. 1 Hi-Spd. Hammer Co.
Riveter, No. 2 High-Speed Hammer Co., heavy duty.
Rivet spinner, Grant No. 81-A, 3/16.
Sand blast barrel, type A, 36x44 New Haven.
Screw mche., No. 0 B. & S., with considerable equipment, almost new.
Screw machine, No. 4 Warner & S., type GFH, power feed to turret.
Shaper, Hendey 15" stroke traverse, with 24" traverse.
Shaper, 16" Ohio heavy duty.
Shapers, 15" Hendey, friction, (4).
Shaper, 20" Hendey, friction.
Shaper, 20" Hendey b. g. crank.
Tapping mche., Garvin No. 1 auto.
Turret lathes, 16" Acme geared fric. head, chasing bar equipment, (2).
Turret lathes, flat, (3), 3x36 Jones & L., with some equip., each \$400.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1001-3-5 N. Sixth St.,

St. Louis, Mo.

LATHES.

11"x 4' Shepard.
15"x 6' Carroll-Jamieson.
16"x 6' Von Wyck.
24"x12' Lodge & Shipley, q. c.
25"x16' Niles, plain change.
26"x10' quick change gear.

26"x10' heavy plain change.
26"x18' Springfield, motor-drive.
30"x12' Pond, q. c.
33"x20' Draper.
50"x20' New Haven trip, geared.
54"x16' Putnam.

SHAPERS AND PLANERS.

16" Smith & Mills.
24" Gould & Eberhardt.

26"x26"x 6' Cox planer.
24"x24"x 6' Cincinnati planer.

DRILLING MACHINES.

15" Barnes.
24" Aurora, sliding head.
40" Aurora, sliding head.

30" arm Fossdick radial.
5' Niles radial.
No. 2 Pawling & Harnischfeger hor.

MILLERS.

No. 12 Kempsmith plain.
No. 3 Kempsmith universal.
No. 3 Becker plain.
Knight vertical.
No. 3 Burke bench.

No. 4 LeBlond plain.
No. 5 Cincinnati.
No. 2 Rockford universal.
Owen duplex.

MISCELLANEOUS.

Bulldozer, 75-ton Lorie.
Grinder, 5"x18" Ott.
Grinder, 8"x30" Modern.
Grinder, No. 1 Brown & Sharpe.
Grinder, 8"x18" Ott universal.
Keyseater, No. 7 Catlin.
Marking machine, Mathews.
Motors: 5, 10, 15, 20 & 50 h. p., d. e.
Motors: 5, 10, 15, 20 & 30 h. p., 3 phase, 60 cycle.
Pipe machine, Forbes 8".

Pipe machine, 12" Curtis Forbes.
Rivet spinner, Grant.
Saw, No. 12 Higley.
Screw machine, 14" Foster.
Screw machine, No. 1 Wood turret.
Screw machine, No. 3 Wood turret.
Slotter, 36" Niles.
Slotter, 48" Betts.
Steam pumps, Union.
Tapper, No. 2 Garvin.
Turret boring mill, 30".

SECOND-HAND MACHINERY

FOR SALE BY

J. L. Lucas & Son, Inc.,

Bridgeport, Conn.

Lathe, 24"x12' Joseph Crawford quick change screw cutting, 2" hollow spindle, 3-step 5" cone, back geared, taper attachment, compound rest, chuck; condition equal to new; price for quick sale f. o. b. cars.....	\$ 750.
Miller, No. 1 Brown & Sharpe, back geared, 3 T-slots in table.....	300.
Miller, No. 1 Brown & Sharpe universal, with dividing heads, straight arm, quick change and chain feeds; excellent condition; price.....	475.
Wire and cut-off machine, 8" Shuster, 12' maximum cut-off; very excellent condition; price f. o. b. cars.....	500.

FOR SALE BY

Austin Machinery Corp'n, 609 Railway Exchange Bldg., Chicago

AIR COMPRESSOR.

Ingersoll-Rand Imperial type 10xB2, 1180 cu. ft. per minute. Belt-driven by 200 h. p. motor.

BORING MILLS.

No. 10 Beaman & Smith horizontal; bed, 72"x24"; table, 48"x24"; motor driven.
No. 2 Pedrick column type, with floor plate and outer support.
60" Niles vertical, 2 swivel heads, friction feed, 5 step cone, 5" belt.
42" Bullard rapid production, 1 swivel and 1 turret head.

BULLDOZER.

No. 5 Blakeslee worm dr., 20" str. Face of cross hd. 65"x14". Die space 39".

GRINDERS.

No. 1 LaSalle surface.
No. 12 Brown & Sharpe; live head operated by flexible shaft.
13x43 Modern universal No. 3, over-head countershaft.
No. 2 Ohio, all hand feeds.
Springfield variety, 24" ring wheel; hand feeds.
Walker universal, with internal spindle.

LATHES.

48"x22' Bridgeford, latest type grd. head; arranged for grd. motor dr.; same as new; 4 face plate jaws.
48"x20' Sellers external face plate drive, 5-step cone, 5" belt.
42" Niles roll turning, with 3 carriages for turning printing, paper mill and other rolls.

MILLING MACHINES.

No. 5 Becker vertical.
Model C Becker vertical.
No. 14 Garvin knee type.
No. 14 Garvin vert., planer type, (2).
No. 11 B. & S. plain.
Duplex Newton, with planer type table operated by screw.
Pratt & Whitney automatic.
6"x14" Pratt & Whitney thread miller.

MEASURING MACHINE.

6"x80" Pratt & Whitney measuring machine.

PRESSES.

No. 4 Industrial, upright, dbl. side, 18" and 24" throats, 6" stroke.
Arranged for geared motor drive.
857 & 856 Toledo rack & pinion, (3).
60" Bliss rack & pinion, (3).
115" Toledo wiring, 28" stroke, (2).
D45 Ferracute horiz. bulldozer, 48" stroke, capacity 10" stock, (3).
No. 5 Bliss Stiles, 6" belt, flywheel type.

PLANER.

36"x36"x18' Cincinnati, 2 heads on rail, arranged for motor drive.

RADIAL DRILL.

Cleveland wall radial, 15' arm, wheel & lever feed, 6' vertical adjustment.

SLOTTERS.

18" Drill, arranged for motor drive, table 34".
36" Niles, circular table 50", cross feed 30", longitudinal feed 50".

SCISSORS.

No. 134 Marshalltown rotary, with 6' 3" throat, arranged for motor drive.

MISCELLANEOUS.

Crane motors, new Standard, and accessories, (40).
Drill press, Baker, 24" capacity.
Furnace, Quigley, 9' 8"x31' 5"x9' 10", complete with 9 oil burners and electric pyrometers.
Testing machine, 100 000 lb. Tinius Olsen, motor driven.

SECOND-HAND MACHINERY

FOR SALE BY

B. C. Allen Machinery Co.,		551 W. Monroe St., Chicago, Ill.	
Dividing head, 10".....	\$ 75.	Miller, No. 0 Steptoe.....	\$285.
Drill presses 14"-20"-24"-32".....		Miller, Carter & H. bench.....	40.
Drill press, 34" Barnes.....	300.	Miller, No. 1 Kempsmith univ.....	575.
Drill press, Allen h. s. sen.....	95.	Punch press, No. 2.....	140.
Hack saw, Racine high speed.....	75.	Punch press, No. 3 Bliss, solid b.....	350.
Keyseater, No. 2 Davis.....	100.	Punch press, No. 4 Consol'd, gr.....	500.
Lathe, Rahn, Carpenter.....	250.	Screw mche., Dreses 1".....	185.
Lathe, 16"x8" new Canedy-Otto.....	325.	Shaper, 14" Hendey friction.....	135.
Lathe, 21"x12" Lodge-Davis.....	400.	Shaper, 16" Steptoe.....	200.
Lathe, McCabe double spindle 22/44"x12".....	550.	Square shear, 11" Ohls.....	675.
		Turret lathe, No. 5 Pearson.....	250.

FOR SALE BY

W. P. Little Co.,		1616 Columbus Road, Cleveland, Ohio	
		LATHES.	
14"x 6' Porter, c. r.....		16"x 6' Cincinnati, d. b. g., q. c. g.....	
14"x 6' American, q. c. g., t. a.....		18"x 8' Rahn & Mayer, c. r.....	
14"x 6' LeBlond, c. r.....		26"x 9' Bridgeford, d. b. g., q. c. g.....	
		SHAPERS.	
10" Pratt & Whitney crank.....		16" Barker, back geared, crank.....	
14" Steptoe crank.....		20" G. & E. b. g. crank.....	
		MILLING MACHINES.	
U. S. hand milling machine.....		No. 2 Cincinnati plain.....	
No. 0 Cincinnati plain.....		No. 3 Kearney & Trecker plain.....	
No. 1 B. & S. universal.....		Lincoln pattern millers (4).....	
		DRILL PRESSES.	
24" Aurora, sliding head.....		4" Hammond sensitive radial.....	
		PUNCH PRESSES AND SHEARS.	
No. 21 Bliss, o. b. i.....		No. 6 Rockford, straight side, grd.....	
No. 27 Cleveland horning press.....		No. 61 Bliss.....	
		MISCELLANEOUS.	
Blower, No. 8 Sturtevant.....		Hammer, steam, 250 lb. Morgan.....	
Bolt cutter, 3" National.....		Keyseater, No. 1 Baker Bros.....	
Broach, No. 3-A Lapointe.....		Slotter, 8", rotary table.....	
Furnace, Frankfort, 16" door.....		Spline miller, 4" Pratt & Whitney.....	

FOR SALE BY

The Randle Machinery Co., 1723 Powers Street, Cincinnati, Ohio	
ENGINE LATHES.	
16"x 6' American, sgl. pulley drive, geared hd., q. c.....	\$ 650.
18"x 8' LeBlond, loose change.....	450.
20"x10' Hamilton, loose chg.....	500.
PLANERS.	
24"x24"x7' New Haven, one head.....	\$ 475.
42"x42"x24' Gray, 2 heads, belt drive.....	2,600.
32"x32"x 8' Gray, 1 head, belt drive.....	900.
Pedrick & Ayer open side, planes 30" wide, bed 11' long.....	1,000.
MISCELLANEOUS.	
Boring mill, 60" Niles vert.....	\$1,500.
Boring mill, 10" Niles vert.....	4,000.
Boring mill, No. 2 Barret, 24x15.....	1,600.
Drill press, 45" upright, back geared, power feed.....	300.
Grinder, No. 60 Heald cylinder.....	1,250.
Miller, No. 24 Rock'd univ.....	800.
Miller, No. 2 Cincinnati pl.....	700.
Miller, No. 1 Cincinnati univ.....	500.
Shaper, 16" Barker, b. g. crank.....	\$ 450.
Shaper, 24" Barker, b. g. crank.....	625.
Shear, 11' squaring, belt drive, cap. 1/2" steel.....	1,200.
Turret lathe, H-21" Gisholt, late type.....	1,500.
Turret lathe, flat, 2x24" Jones & Lamson.....	350.

Many other bargains. Send us your requirements.

SECOND-HAND MACHINERY

FOR SALE BY

The Sharp Spark Plug Co.,

Wellington, Ohio

Automatics, 1½" multiple spindle Gridley, complete with motor; practically new.

Automatics, 1½" mult. sp. Gridley, without motor; first-class condition.

Automatics, 1½" multiple spindle Acme No. 55; in good condition.

Swaging machine, No. 2 Excelsior; in first-class condition.

FOR SALE BY

Brown Machinery Co.,

2323 N. 9th St., St. Louis, Mo.

Boring mill, 60" Sellers, 2 heads.

Drill, 30" Gould & Eberhardt.

Drill, 30" Prentice.

Drill, 24" Sibley & Ware.

Drill, 26-spindle Baush.

Drills, 4, 5 & 6 spindle Allen.

Drills, Nos. 1 & 3 Barnes hor. radial.

Gear cutter, 30" Whiton.

Grinder, surface, 1 LaSalle.

Grinder, 14" Besly.

Grinder, No. 2 Oesterlein univ.

Grinder, Woods No. 24 univ.

Hammer, 1200 lb. Chambersburg,

double frame steam.

Hammer, 800 lb. Lane, dbl. fr., stm.

Lathe, 14", 16", 20", 26" Walcott,

d. b. g., q. c. g.

Lathe, 14"x 6' Monarch, d. b. g. q. c. g.

Lathe, 16"x 6' Sidney, q. c. g.

Lathe, 24"x10' Fay & Scott.

Lathe, 26"x12' 10" Wickes, d. b. g.,

q. c. g., taper attachment.

Miller, 3-B Owen, vert. attachment.

Miller, 1-B Fox horizontal.

Miller, No. 4 Hendey, b. g.

Miller, No. 7-H Becker.

Miller, No. 2 American Lincoln.

Planer, 24"x24"x6' Lodge & Davis.

Presses, Swaine Nos. 57 & 35.

Presses, toggle, Robinson 5' & 10'.

Press, No. 5 Bliss Stiles.

Profilers, two-spindle, Pratt &

Whitney, Putnam, Reed-Prentice.

Riveter, air, P-A.

Roll, plate straightening, No. 0

Hilles & Jones.

Saws, band metal, 10x10" Napier.

Shaper, 16" Whipp, s. g.

Shapers, 20" Walcott, 16" G. & E.

Shears, 134 Marshalltown, 4".

Shear, No. 31 Exc. alligator.

Shear, 52" Niagara, ft. sq.

Stake riveter & punch, No. 3 Hilles

& Jones, 5' throat.

Turret lathe, 24" Wysong & Miles.

Turret lathe, 16" Gisholt.

FOR SALE BY

Jones Machine Tool Co.,

435 E. Pearl St., Cincinnati, Ohio

ENGINE LATHES.

16"x 6' Greaves Klusman, s. q. c., t. a.

16"x 8' Bradford, q. c.

16"x 8' Prentiss, grd. hd., q. c.

17"x 8' Sidney, q. c.

18"x 8' Walcott, q. c.

20"x 8' Boye & Emmes, q. c.

24"x12' LeBlond, q. c.

24"x12' Boye & Emmes, l. c.

24"x16' Star, l. c.

26"x10' Walcott, q. c.

26"x10' Bridgeford, q. c.

36"x24' American, q. c.

DRILL PRESSES.

20" Superior, w. & l. feed.

22" Prentice, p. f.

24" Aurora, b. g., s. h.

24" Prentice, s. h., taper attach.

28" Cincinnati, b. g., p. f. and t. a.

36" American sensitive radial.

SHAPERS AND PLANERS.

15" Cincinnati crank.

16" Smith & Mills crank.

24" Steptoe crank.

24x6 New Haven, 1 head.

24x6 Gray, 1 head.

24x10 Cincinnati, 2 heads.

MILLING MACHINES.

No. 5 Becker vertical.

No. 2 Owen plain.

No. 3 B. & S. plain, s. p. drive.

No. 3 Milwaukee, plain, s. p. drive.

No. 4 Cincinnati, plain.

No. 14 Knight vertical miller.

MISCELLANEOUS.

Automatics, Cleveland, 24" cap.

Boring mill, Lucas, 3" bar.

Boring mill, Bullard 24" vertical.

Gear cutters, 26" & 36" B. & S.

Grinders, No. 60 Heald (2).

Grinder, 14"x72" Norton.

Grinder, B. & S. surface, planer type.

Pipe machines, 4", 6" & 8".

Press, No. 5 Toledo, o. b. inc.

Presses, P-2 & P-3 Ferracute.

Press, No. 5A Willard, o. b. inc.

Square shear, 96" foot power, 20 ga.

Let us know your wants. We can supply you.

SECOND-HAND MACHINERY

FOR SALE BY

The Reeve-Fritts Company, - 37 So. Desplains St., Chicago, Ill.

Arbor presses, all sizes.
Boring mill, Cleveland hor., 2 $\frac{1}{2}$ " bar.
Drill, 2 $\frac{1}{2}$ " W. E. Gang radial.
Drill, 20" Superior, w. & l.
Drill, 20" Champion, w. & l.
Grinder, Cleveland profile, motor dr.
Grinder, 6" x 32" No. 11 B. & S. univ.
Lathe, 11" x 5' Barnes, c. r.
Lathe, 11" x 6' Seneca Falls, c. r.
Lathe, 12" x 8' Davis, with taper.
Lathe, 14" x 6' Rock., 3 st. c., d. b. g.
Lathe, 20" x 8' Bradford, d. b. g.

Lathe, 26" x 12' Bridgeford, q. c. g.
Miller, No. 0 Rockford plain.
Planer, 30" x 30" x 8' Cleveland, o. s.
Press, No. 3 Cons., o. b. i.
Press, No. 4 $\frac{1}{2}$ Amer. Can. arch.
Presses, Nos. 9 & 10 Standard, o. b. i.
Screw mch., No. 19 B. & S. auto.
Turret lathe, 3 $\frac{1}{2}$ " Gridley auto.
Turret lathe, 16" Dreses Fox.
Shaper, 12" S. & M., crank.
Shaper, 15" P. & J.
Shaper, 20" Rockford, b. g.

FOR SALE BY

**Reliance Machinery Sales Company
Brighton Road at Pennsylvania Ave., - - - Pittsburgh, Pa.**

Blowers, Nos. 6-8-10 Sturtevant.
Bolt cutter, $\frac{1}{2}$ " to 1 $\frac{1}{2}$ " b. d.
Boring mill, B. & S. hor. 3" spdl.
Boring mill, No. 2 Rockford hor.
Cut-off mch., No. 2 Cochrane-Bly.
Hammer, 100 lb. Kady, belt lift.
Lathe, 14" x 6' Monarch, p. c. g., c. r.
Lathe, 14" x 6' Hendey, q. c. g., t. a.
Lathe, 16" x 8' Fitchburg, p. c. g.
Lathe, 18" x 8' Lodge & S., q. c. g.
Lathe, 26" x 10' 6" Walcott, q. c. g.
Lathe, 28" x 16' Fitchburg, c. r.
Lathe, 8" x 20" Wood with motor.
Millers, Nos. 2 & 3 Cincinnati pl.

Miller, No. 4 Le Blond heavy duty.
Millers, No. 5-C Becker vertical (2).
Oil separator, No. 2 American.
Pipe mche., E., C. & B. $\frac{1}{2}$ " to 2" b. d.
Pipe mche., Williams, $\frac{1}{2}$ " to 3" b. d.
Pipe machine, Merrell, 2 $\frac{1}{2}$ " to 12".
Press, No. 20 Bliss, 2" str., m. d.
Punch, No. 4 L. & A. 5" thr., $\frac{1}{2}$ " x $\frac{1}{4}$ ".
Radial, 3 $\frac{1}{2}$ " Bickford, s. p. d.
Riveter, Allen, 8" bore, 19" throat.
Shaper, 16" Smith & Mills crank.
Shaper, 16" G. & E., b. g. crank.
Shear, Lennox throatless, $\frac{1}{2}$ " b. d.
Turret, W. & S., cap. 1", auto. chuc.

Our warehouse is full of bargains. What have you for sale?

FOR SALE BY

P. Prybil Machine Co., Inc. 512-524 W. 41st St., New York, N. Y.

LATHES.

14" x 6' stud and bolt, P. Prybil.
16" x 6' polishing, P. Prybil.
20" x 12" safety stops, taper attachments, Lodge & Shipley.

30" x 16' Pond.
30" x 32' back geared, shaft lathe.
36" x 12' Lodge Davis.

MILLING MACHINES.

64" x 16" table, spindle cone, Cincinnati.

DRILL PRESSES.

12" post drill, 11 $\frac{1}{2}$ " x 15" table, hand feed, P. Prybil.
12" sensitive, 11" x 11" table, Washburn Shops.
12" x 4" spindle, 36" x 12" table, Reed.

12 spdl. mult., 18" x 24" tbl. Baush.
17" back geared, Aurora.
20" adjustable table, Reed.
30" sliding hd., adjustable tbl., Pond.
48" arm radial, 37" x 6' table, univ.

PULLEY LATHES.

36" dia. x 34" face, 2 heads, Niles.

50" dia x 30" face, 2 heads, Niles.

PLANERS AND SHAPERS.

16" stroke, self-feed, Steptoe.
26" x 26" x 6' one head, Pond.

48" x 48" x 16' open side, Detrick & Harvey.

BORING MILLS.

50" pulley borer, power feed, Niles.
84" 2 heads, 67" table, Niles.

84" x 36" x 3" bed horiz. borer, B. & S.

MISCELLANEOUS.

Arbor presses, various sizes.
Broaching machine.
Forges and blowers.

Grinders, various sizes.
Power hack saws.

SECOND-HAND MACHINERY

FOR SALE BY

Brownell Machinery Co.,

11-13 Eddy St., Providence, R. I.

ENGINE LATHES.

10"x 4' Young Bros., foot power.

12"x 5' Shepard.

14"x 6' Reed.

16"x 8' Worcester.

19"x 8' Blaisdell.

21"x16' Reed.

MILLING MACHINES.

No. 1-M Potter & Johnston continuous automatic.

No. 5-C Becker vertical, rotary.

No. 6 Becker 62" vertical.

No. 2 LeBlond universal.

No. 1½ Brown & Sharpe universal.

No. 6 Whitney hand miller.

No. 1 Brown & Sharpe plain.

BORING MILLS.

No. 1 Beaman & Smith horizontal.

No. 1 Cleveland horiz., floor type.

54" Bullard rapid production type, vertical.

PLANERS AND SHAPERS.

17"x17"x 4' Whitcomb.

22"x22"x 5' Whitcomb.

36"x36"x13' Betts, 4 heads.

36"x36"x22' Pond, 2 heads.

48"x48"x16' Patch, 4 heads.

15" Potter & Johnston shaper.

16" Sellow shaper.

20" Kelly shaper.

16" Flather, gear box.

PUNCHES AND SHEARS.

36" throat McCabe, single end, 1½x1.

50" throat McCabe, single end, 1½x1.

HAMMERS.

40 lb. Bradley cushioned helve.

50 lb. Bradley upright helve.

300 lb. Beaudry Champion.

50 lb. Standard plain drop.

MISCELLANEOUS.

Annealer, 15x18 Kenworthy.

Drill, 24" Cincinnati, tapping attach.

Drill, 20" Prentice, sliding head.

Keyseater, No. 1 Davis.

Pipe machine, 3" Curtis.

Saw tables, Kidder, tilting top.

Saw, 48" F & E angle band ship saw.

Saw, Clement dbl. arbor saw bench.

Wire coiling mchs., No. 3 Standard.

Wood planer, 12" Rogers.

**We Have the Largest Stock of
New and Used Machine Tools,
Wood-Working Machinery, Etc.,
In the State of Michigan**

Let us have your inquiries. Our prices will satisfy you.

Ask for our latest Stock List

**Riverside Machinery Depot
251 St. Aubin Ave., Detroit, Mich.**

ReMANUFACTURED - (ORIGINATED BY US) - MACHINE TOOLS

REG. U. S. PAT. OFF.

EVERY ReMANUFACTURED MACHINE TOOL in our place represents an unusual BARGAIN. A card will bring our latest GREEN LIST containing 2000 machine tools. We welcome inspection of our plant and our process.

LATHES.

- 1-45"x24" Pond, triple gd.
- 3-36"x42" LeBlond, q. c. g.
- 13-36"x30" Pittsburgh, q. c. g.
- 1-36"x19" Johnson, triple geared.
- 6-30"x11" American, geared head.
- 13-each 26"x9", 10", 12", 14", 16", 18" and 20" Bridgeford, q. c. g.
- 3-20"x10" Lodge & Shipley, q. c. g.
- 89-30"x 8", 12" & 16" Amer., q. c. g.
- 1-18"x 8" Boye & Emmes, q. c. g.
- 1-18"x 8" Lodge & Shipley, q. c. g.
- 3-18"x 9" Lehmann, q. c. g.
- 7-17"x 6" LeBlond mfg. auto.
- 2-16"x 6" Bradford, q. c. g.
- 1-15"x 6" Sidney, q. c. g.
- 1-14"x 6" Bradford.
- 1-13"x 5" Willard.

DRILLING MACHINES.

- 1-each 3", 3½", 4" and 6" Western Radials.
- 2-No. 11 Pratt & Whitney mult. sp.
- 2-No. 11 Natco multiple spindle.
- 21-3, 4 & 6 spindle Allen, b. b.
- 1 each 1 & 2 spdl. Henry & Wright.
- 6-20" Barnes plain and b. g.
- 6-20" Rockford plain and b. g.
- 6-22" Barnes, sliding head.
- 1-26" Barnes "Camel Back".
- 1-23" Cincinnati, tapp. att.
- 1-28" Cincinnati.
- 1-34" Barnes.
- 1-36" Cincinnati, tapp. att.
- 1-40" Cincinnati.
- 1-No. 1 Baker.

GEAR CUTTERS & HOBBERS.

- 3-18" Gould & Eberhardt.
- 13-No. 1 Farwell.
- 2-Nos. 3-26 & 3-36 B. & S.
- 6-No. 6 Fellows.
- 1-No. 6 12 Fellows.
- 1-36" Gleason bevel.

CRANK SHAPERS.

- 1-15" Potter & Johnston.
- 3-each 16" and 20" Steptoe, b. g.
- 3-ea. 16", 20" & 24" Walcott, b. g.

VERTICAL BORING MILLS.

- 15-24" Bullard New Era vertical.
- 1-30" Gisholt vertical.
- 1-36" Bullard vertical.
- 1-42" Gisholt vertical.
- 1-37"-44" Colburn vertical.
- 1-48" Colburn vertical.
- 1-60" Bullard vertical.
- 1-72" Betts vertical.
- 3-72" Cincinnati.
- 1-10" Niles vertical.
- 1-No. 3-A universal horizontal.
- 1-No. 5 Defiance horizontal.
- 3-Foote-Burt horizontal.
- 1-Cleveland horizontal.

MILLERS.

- 2-No. 1 Brown & Sharpe plain.
- 1-No. 1 Brown & Sharpe univ.
- 1-No. 1½ Cincinnati univ.
- 15-Nos. 2 & 3 Kempsmith plain.
- 2-No. 2A Brown & Sharpe univ.
- 4-No. 4 Cincinnati plain.
- 1-No. 4 Cinti. univ. hi-power.
- 1-No. 3 Brown & Sharpe vert.
- 1-No. 2½B Milwaukee vert.
- 1-No. 3 Becker vert.

PLANERS.

- 1-36"x72"x20" Bement, 4 heads.
- 1-60"x48"x10" Gray, spiral geared.
- 1-36"x36"x10" Beckett.
- 1-30"x30"x10" Woodward & P.
- 1-24"x24"x12" Whitcomb.

TURRET LATHES.

- 1-3½" Foster.
- 2-3x36" Jones & Lamson.
- 1-2" Brown & Sharpe.
- 3-1½" Warner & Swasey.
- 5-1½" Foster No. 3.
- 5-1" Foster No. 2.
- 8-1" Warner & Swasey.
- 8-½" Pratt & Whitney.
- 4-24" Gisholts.

GRINDERS.

- 46-4"x20" to 20"x96" Landis, Brown & Sharpe, Cincinnati, Modern and Norton plain and universal.

WRITE FOR COMPLETE LIST

HILL, CLARKE & CO. OF CHICAGO
649 W. WASHINGTON BLVD., CHICAGO, ILL.

MOREY

GUARANTEED REBUILT MACHINERY.

- 4-Bullard 21" New Era type Boring Mill, vertical.
- 1-Rogers & H. 30" Bori. Mill, vert.
- 1-King 34" Tur. Boring Mill, vert.
- 1-Bullard 42" Boring Mill, vertical.
- 1-N. B. P. 44" s.p.d. Bor. Mill, vert.
- 1-Rockford No. 2 Bor. Mill, horiz.
- 1-Cleveland No. 1 Bor. Mill, horiz.
- 1-B. M. 24" bar Bor. Mill, horiz.
- 11-Allen 5-spld. h. s. Drill, upright.
- 35-Allen 6-spld. h. s. Drill, upright.
- 1-Fox multiple spld. Drill, upright.
- 4-NEW Snyder 36" sliding head Drill, upright.
- 2-NEW Turner No. 3 vert. tur. Drill.
- 4-Hammond h. s. Radial Drills.
- 1-Western 4" pl. mtr. dr. upr. Drill.
- 2-Reed-P. 4" pl. mtr. dr. upr. Drill.
- 1-N. B. P. 3" semi-universal motor driven Upright Drill.
- 1-Baush 6" plain.
- 3-Reed-Prentice 6" plain gear box, motor drive Upright Drills.
- 2-Bilton No. 1 Gear Cutters.
- 1-Bilton No. 2 Gear Cutter.
- 2-Barber-Coleman No. 2 Gear Cut.
- 1-Barber-Coleman No. 12 Gear Cut.
- 1-NEW 8" Hercules Gear Cutter.
- 2-Brown & Sharpe 36" Gear Cutter.
- 1-Cincinnati No. 4 Gear Cutter.
- 3-Fellows No. 6 Gear Cutters.
- 1-Fellows No. 612 Gear Cutter.
- 5-Gleason 18" dbl.-tool generator Gear Cutters.
- 2-NEW Ingle tooth rounding machines, Gear Cutters.
- 2-Blanchard No. 16 mtr. dr. Grind.
- 6-Springfield - Brandes vertical 12x12x48 Grinders.
- 16-Cincinnati No. 2, 12x36 Grinders.
- 3-Heald No. 60 Grinders.
- 6-Heald No. 70 Grinders.
- 6-Sellers No. 1 Universal Tool and Cutter Grinders.
- 1-Hendey 12x5 yoke head Lathe.
- 4-NEW South Bend 13x6 Lathes.
- 1-Hendey 14x6 yoke hd. Lathe, t. a.
- 2-Hendey 14x8 yoke hd. t. att. Lathe.
- 2-Oliver 16x7 q. c. g. Lathe.
- 1-NEW Monarch 18x10 q. c. g. Lathe
- 1-Prentice 30x10 geared hd. Lathe.
- 1-Greaves-K. 20x10 q. c. g. Lathe.
- 2-NEW 21x14 South B. Gap Lathe.
- 2-NEW 24x16 South B. Gap Lathe.
- 2-LeBlond 21x12 geared hd. Lathe.
- 2-Reed-P. 24x14 grd. head Lathe.
- 2-Boye & E. 24x14 q. c. g. Lathe.
- 1-LeBlond 26x12 univ. crank shaft l.
- 1-Walcott 26x16 6" q. c. g. Lathe.
- 1-Reed-P. 27x16" grd. hd. Lathe.
- 2-LeBlond 30x32 geared hd. Lathe.
- 1-Putnam 36x14 geared hd. Lathe.
- 4-Bridgeford 42x32 grd. hd. Lathe.
- 1-W. & S. No. 2A Turret Machine.
- 5-W. & S. No. 3A Turret Mchs.
- 30-P. & J. No. 6A Turret Mchs.
- 10-J. & L. 3"x36" Turret Machines.
- 1-NEW Gisholt 28" m. d. Tur. Mch.
- 25-NEW w. fd. pl. hd. Screw Mchs.
- 5-Foster No. 4 Screw Machine.
- 2-W. & S. No. 4 Screw Machines.
- 1-W. & S. No. 4 univ. Machine.
- 1-B. & S. No. 0 Screw Mche., auto.
- 2-B. & S. No. 2 Screw Mche., auto.
- 30-P. & J. No. 6 Scr. Mchs. auto.
- 3-Cleveland Mod. B. 1" Screw Machines, auto.
- 6-Cleveland Mod. A. 1" Screw Machines, auto.
- 1-Natl. Acme No. 52 auto Scr. Mch.
- 8-Gridley 24" auto Screw Mchs.
- 1-NEW Gridley No. 3 semi-auto, Piston and Piston Ring Machine, auto Screw Machine.
- 1-K. & T. No. 3B pl. s.p.d. Miller.
- 1-B. & S. No. 3B pl. s. p. d. Miller.
- 1-LeBlond No. 4 plain c. d. Miller.
- 1-Cincinnati No. 5 rect. arm Miller.
- 1-Garvin duplex No. 3 Miller.
- 1-Cincinnati duplex 24" Miller.
- 3-NEW Briggs B 42" table Miller.
- 1-Kemp Smith No. 33 plain Miller.
- 2-B. & S. No. 2 Ver. s. p. d. Miller.
- 1-Cin'ti No. 3 ver. h. pwr. Miller.
- 1-Cin'ti No. 3 ver. h. pwr. Miller.
- 5-Becker No. 5C vert. Miller.
- 1-Becker No. 6 vert. Miller.
- 10-Pratt & W. 2" Spline Miller.
- 15-Pratt & W. 4" Spline Miller.
- 2-Kemp Smith No. 2 Miller.
- 1-Rockford No. 2 Miller.
- 1-24x24x5' Wheeler 1 hd. Planer.
- 1-26x26x10' Niles 1-head Planer.
- 7-26x26x 8' Putnam 2 hds. Planers.
- 1-36x36x12' W. & P. 4-head Planer.
- 1-36x36x12' Cincinnati 2-hd. Planer.
- 1-Smith & Mills 16" Shaper.
- 1-Cincinnati 2" b. g. Planer.
- 2-NEW Newton 15" m. d. Slotters.
- 2-NEW Dill 15-18" belt driven.
- 1-Ferracute EG-56 800-ton Toggle Press.
- 4-Bliss No. 64 double action Press.
- 45-Waterbury-F. drawing Nos. 2 1/2 3 1/2 5 1/2 and 6 Presses.
- 25-Waterbury-F. dbl. connection 2" and 4" stroke Presses.
- 10-NEW No. 12 P. & W. Profilers.
- 2-Pratt & Whitney 4 1/2x12" Thread Millers.
- 2-Norton Crank Balancing Mchs.
- 5-NEW M. & P. 50 lbs. Hammers.
- 3-NEW Higley No. 16 Cold Saws.
- 4-Cochrane & Bly No. 2 Cold Saws.

And Many Other Good Machines—Send for Complete List

MOREY AND CO., INC. 408 Broome St., NEW YORK, N. Y.

The Used Mchy. House Known Everywhere—McCabe & Sheeran Mchy. Corp.

Nowhere under thousands of dollars can you match these

LARGE LATHES

*"Niles-Bement-Pond"
"R. K. LeBlond M. T. Co."
"Lodge & Shipley"
"Putnam Machine Co."*

GOOD AS NEW

And less than half the prices new

Judged by your decision after you have seen them

Still set up and will be sold direct from where they are at prices to tempt your buying NOW. You can safely figure that never before have you seen any better Lathes in the Used Machinery Columns. *Some used less than THREE months. Some never run at all. All latest style as built today.*

120-in. Swing, 43-ft. Bed—"NILES-BEMENT-POND"
turns 30' Between centers, Internal Geared Face Plate, 120"
Diam. 12¾" Wide.

60-in. Swing, 40-ft. Bed—"NILES-BEMENT-POND"
Taper Attachment, Motor Driven, with 35 H.P. Motor, D.C.
Current, 230 Volts, separate motor for rapid traverse to carriage
along bed.

Two 48-in. Swing, 42-ft. Beds—"NILES-BEMENT-POND"
Quick Change, Motor Driven, with motor, D. C. Current, and
Separate Motor for rapid traverse to carriage along the bed.

48-in. Swing, 17-ft. Bed—"LODGE & SHIPLEY MACHINE TOOL CO."
Massive Pattern, Geared Head, Single Pulley Drive, Quick
Change, Taper Attachment.

Two 42-in. Swing, 17-ft. Beds—"PUTNAM MACHINE COMPANY"
Massive Pattern, Grd. Head, Sgl. Pulley Drive, Qk. Change.

Two 30-in. Swing, 34-ft. Beds—"R. K. LeBLOND MACHINE TOOL COMPANY"
Geared Head, Motor Driven, with Motors, Separate Motor
for rapid traverse to carriage along the bed.

30-in. Swing, 31-ft. Bed—"NILES-BEMENT-POND"
Quick Change, Motor Driven, with Motor, D. C. Current,
E. C. & M. Control.

"McCabe" 2-in-1 Double-spindle Lathes Heavy Pattern

1—26/48" Swing, 16' Bed, turns 10' centers.

1—38/60" Swing, 18' Bed, turns 12' centers.

1—38/60" Swing, 26' Bed, turns 20' centers—Taper att.

The IMMEDIATE DISPOSAL of these Lathes is of such commanding importance that we have CROWDED OUT of this page Lists of other attractive items such as Planers, Radial Drills, Milling Machines, Turret Lathes, and an immense assortment of High-Grade Machine-shop Tools, still under belt—in actual operation.

McCabe & Sheeran Machinery Corporation
50 Church St. Phones: Cortlandt 2464-6586 NEW YORK

Harris Brothers Co.

1475 W. 35th St., Chicago, Ill.

Immediate Delivery!

GRINDERS

Diamond 6"x48" Plain External Cylindrical Grinder.
Brown & Sharpe 8"x16" Universal External Cylindrical Grinder.
Landis 16x60 Univ. Extern'l Grinder.
Fitchburg 12"x36" Plain External Cylindrical Grinder.

DRILL PRESSES

Foot-Burt Vertical 2 spindle adjustable Heavy Model 3" capacity also adapted for cylinder boring.
Foot-Burt Vertical 4 spindle—same.
Bickford Plain Radial with tapping attachment 5' arm.
Niles Bement Pond Co. Plain Radial 6' arm with tapping attachment.

VERTICAL BORING and TURNING MILL

72" Colburn with 2 swivel heads.

PUNCH PRESSES

Ferracute D. G. G. No. 55 Straight Sided, Single Action, Dbl. Back Grd. Punch Press. Friction Clutch Drive. Distance between Uprights 23"; Area of Bed, R to L 24", F to B 31"; Stroke of Slide 16"; Ram Pressure 70 tons. Weight about 16,000 lbs. Condition 95% new.

Ferracute D. G. G. No. 56—same. Distance between Uprights, 32"; Area of Bed, R to L 30"; F to B 36"; Stroke of Slide, 16"; Ram Pressure 100 tons. Weight about 22,000 lbs. Condition 95% new.

Ferracute No. E57 Toggle or Embossing D. G. G. Distance between Uprights 36"; Area of Bed, 36x36; Stroke, 24"; Ram Pressure 1500 tons. Weight (each) about 140,000 lbs. (2 machines). Condition 99% new.

ENGINE LATHES, TRIPLE GRD., SCREW CUTTING

96x37 Fifeild, 27' centers
68x40 Pond, 30' centers
60x40 Fifeild, 30' centers
with 2 carriages on bed, with compound rests, hollow spindle. (2 Machines). Nearly new.

ENGINE LATHES, TRIPLE GRD., SCREW CUTTING — Continued

36x32 Amer. Tool Wks., 25' centers with 2 carriages on bed, with compound rests, have power angular feed, quick change. Nearly new. (3 Machines).
36x32 LeBlond, 25' centers with carriages on bed, compound rests, taper attachment, quick change. Nearly new. (2 Mchs.)

ENGINE LATHES (NOT SCREW CUTTING) PLAIN TURNING

36x27 Niles-Bement-P., 21' centers Heavy duty, all geared head.
36x33 Niles-Bement-P., 27' centers Heavy duty, all geared head.
26" Davis Furber, Pulley Turning.
18x8 Fulton Plain Turning, B. G.
48" Niles Double Head Car Wheel Turning Lathe, with 2 carriages.

MILLING MACHINES

Ingersoll 24"x24"x12' Table Horizontal Slab Milling Machines with INCLINED ADJUSTABLE RAIL—(Brand New) (6 machines) —Weight about 25,000 lbs.

HENDEY No. 4 Milling Machines Table 9"x24" (Automatic Fd. 20") 250 Machines.

BECKER No. 7 H. Milling Machines, Table 9"x29", (Automatic Feed 20") 250 Machines.

PEDRICK & AYER No. 3 Univ. Milling Mche. (Automatic Feeds 34"x10"x18"). Table 52"x14".

Whitney No. 6 Hand Milling Mchs. Table 20"x4" (Feeds 16"x6"x13") 10 Machines.

VERTICAL MILLING MACHINES

BECKER No. 5 C Latest Improved Model Single Pulley Drive (All Geared Speeds) Table 56x14" (Auto. Fds. 54x16x14") 2 Machines
BECKER No. 5 Table 48"x13" (Auto. Feeds 40"x15"x12").

NEWTON No. 1 with Automatic Revolving Rotary Table 22" dia. (Auto. Fds. 20"x12"x12") Swings work 32" dia.

BROWN & SHARPE No. 3 Table 60"x16" (Auto. Fds. 34"x16"x14").

Write for a free copy of Bulletin No. 205 describing our complete stocks of Machine Tools.

Back to Lower Prices

WE CONVERT ANY NEW OR USED CONE DRIVEN TOOL INTO AN ALL-GEARED MOTOR DRIVE QUICKLY AT REASONABLE COST. FULL DETAILS AND PRICE ON REQUEST.

LATHES

9" to 13" Barnes, h. a., cp. r., new.
10"x 5' Summit, nearly new (2).
13-15-16 and 18 O. & S., h. a., c. r., new.
14"x 6' Hamilton, grd. hd., motor dr.
14"x 8' Young, h. a., c. r.
18"x 8' Monarch, q. c., d. b. g.

20"x 10' Prentice, taper.
21"x 8' LeBlond, heavy duty.
25"x 14' Schumacher & Boye.
28"x 8' Bridgeford, heavy duty.
Ames precision bench, 1" capacity.
8"x 60' Fitchburg Lo-Swing.

TURRET LATHES and SCREW MACHINES

No. 4 Defiance (2).
14" Tilted turret hand screw mche.
1" and 1 1/2" Mulholland.

2x24 & 3x36 J. & L., dbl. equipment.
No. 2 Warner & Swasey hol. hex.
Nos. 52 and 56 National Acme.

SHAPERS

14" Niles, traveling head.
14" Steptoe, crank.
16" Springfield, crank, back grd.

16" & 24" Barker, b. g. crank.
20" Walcott, geared.
20" Smith & Mills, geared.

PLANERS

24x24x 6' Pease.
36"x36"x12' Niles.
44x44x12' Pond, 4 heads.
48x48x16' Bement-Miles, 2 heads.

54x54x16' Sellers, 4 heads.
60x60x17' Betts, 2 heads.
60x60x20' Sellers, 4 heads.
68x68x20' New Haven, 2 heads.

PRESSES

No. 18 Bliss, open back inclinable.
No. 35 Niagara, Stiles type, (2).

3-A, 4-A, 5-A and 6-A Willard.
Emco, bench, for radio parts.

DRILLS and RADIALS

3' Morris plain, gear box drive.
3 1/2' Canedy-Otto plain, new.
Sensitive 1, 2, 3, 4 and 6 spindle.

24", 26", 28" and 32", sliding head.
26" Barnes all geared, camel back.
Avey High Speed, bench (2).

**New Standard Makes 20" Drills, each \$109.50
Motors, 1/2 to 50 H. P., 3 ph., 220 v., G. E., New**

MILLING MACHINES

No. 25 Becker plain, (3).
Ames, Lincoln type, 10"x40" table.
No. 3 Kempsmith universal.
No. 3 Brainard, 30x7 table.

No. 1 1/2 B. & S. plain.
No. 2 H Brown & Sharpe plain.
Briggs type "A" high duty, 24x8 table.
No. 32 Kempsmith Lincoln type. (3).

GRINDERS

Nos. 1, 3 & 78 W. & M. surface.
10x24 Norton plain.
No. 2 W. & P. 10x30 universal.
12x36 Cincinnati universal.

36" and 66" Yates plate.
6x32 Norton, plain.
Capital internal, new, 2"x2".
6x30 W. & P. plain.

MISCELLANEOUS

Band saws, metal, Klemm, (2).
Bending rolls, 8", for 3" plate.
Boring mill, 12", 2 swivel heads.
Boring mill, Bullard 34" turret hd.
Brake, 8" hand, 18 gauge.
Cold saw, Burr, 3" capacity.
Compressors, 9x8 and 12x10, new.
Etching machine.
Gear cutter, Whiton 36"x9 1/2" face.
Gear millers, Bilton No. 1, (5).
Hammers, 40 lb. Bradley, helve, (2).
Hammer, 150 lb. Standard drop.

Hammer, No. 2 Pettingell, 33" thrt.
Oil separator, Springfield.
Pipe machines, 2", 4", 6" & 12".
Pumps, Gould triplex, 6 1/2"x8" & 7x8".
Punch & shear 1/2 by 1/2, 10" throat.
Pyrometer, Brown 2000°, 2-way.
Riveter, high speed, 1/2" capacity.
Sceleroscopes, Shore, (2).
Shear, 5' Robinson, for 10 gauge.
Shear, No. 20 Quickwork, 30" throat.
Shear, 52" Niagara, 18 gauge.
Tapping mche., 1/2" Rickert-Shafer.

**THE
OSBORNE & SEXTON
MACHINERY
COLUMBUS
COMPANY
OHIO**

\$1250 Cars, Pittsburgh, Pa.

One-third cash with order, balance sight draft
against bill of lading.

Sacrificing a good used **Planer** on account of
needing the room

1—Betts 60", widened to take 72" between housings, 2 heads on rail. 12' table. Will take 56" under rail. Belt drive. Complete with counter-shaft. In splendid operating condition.

You have in mind the purchase of a large PLANER because there have been times in the past when you could have used it, and furthermore, you have to turn down jobs because your planer is not large enough. Don't blame anybody but yourself if you let this planer get away.

As a matter of fact, if you have to borrow the money at 6% to own this tool, the interest charge is only \$75 per year. How much per year will it earn belted up in your shop, ready to do those jobs too large for your present planer?

We have been selling used machinery for thirty-eight years, and never in our business career have we offered such a bargain. Business is improving and a few months from now you will say to your partner, superintendent or foreman "I am sorry we missed that planer that Russell offered last December." That is, if you do not take advantage of this opportunity. Then, do not blame anybody but yourself. Act now, and make the other fellow sorry. No inspection is necessary, but will be pleased to have you inspect if you desire.

Russell Machine Company

28th St. & A. V. R. R.
Pittsburgh, Pa.

A GREAT LATHE

A RARE OPPORTUNITY TO BUY

NILES-BEMENT-POND "Modern Type" 92"x50"
Modern Type"—92" sw.,—50" bed, 38" bet. centers,
motor traverse carriage and motor shelf for geared
motor drive on head, inc. motors and all elec. equip.
Length front Bearing—26". Spindle diameter,—18".
Weight 150,000 lbs. Used but 1 year. Condition
guaranteed equivalent to new.

LATHES

- 54"x21" Pond.
- 50"x14" American.
- 36"x14" Bridgeford, geared head.
- 28"x12" Boye & Emmes, qck. chg.
- 26"x16" Bradford, motor driven.
- 26"x14" Niles-B.-P., quick change.
- 26"x10" Bridgeford, quick change.
- 24"x12" Schumacher & Boye, q. ch.
- 21"x 8" McCabe, q. c.
- 18"x10" McCabe, q. c.
- 16"x 8" Lodge & Shipley, q. c.
- 34"x60" Fitchburg "Lo-Swing".

McCABE 2-in-1 DOUBLE SPINDLE LATHES

- 32/34" swing 36" bed, taper attach.
arranged for motor drive.
- 26/48" swing 26" bed, latest type,
slightly used, guar. good as new.

TURRET LATHES & SCREW MCHES.

- 28" swing, Pond, rigid type.
- 24" swing, Gisholt, motor driven.
- 21" swing, Gisholt, gap.
- 21" swing, Gisholt, 3/4" hole.
- 3x36" Jones & Lamson, grd. hd.
- 2x24" Jones & Lamson, grd. hd.

BORING MILLS.

- 10—16" Betts, double head.
- 54" Niles, single head.
- 48" "Gisholt," double head.
- 42" Bullard, double head.
- 30" Bullard, turret head.

PLANERS

- 64"x60"x30" Pond, 4 hds., motor dr.
- 42"x36"x16" Detrick & Harvey, 2 hds.
- 48"x48"x15" Pond, 2 heads.
- 48"x48"x14" Sellers, 3 heads.
- 42"x36"x12" Gray, 2 heads.
- 30"x30"x 6" Cincinnati, 1 hd., latest.
- 30"x30"x 6" Gray, 1 head.

BENDING ROLLS

- 10' 2" McCabe drop-end, balance bar
type (motor or belt drive).

SLOTTERS

- 24" Niles-Bement-Pond (like new),
complete with motor.
- 18" Putnam, motor drive.
- 14" Sellers.

GEAR CUTTERS

- 22" Gleason, bevel gear.
- 30" Gould & E., spur and bevel.
- 36" Fellows gear shaper.

RADIAL DRILLS

- 4' Fossdick, plain.
- 4' Carlton, speed box.
- 3' Carlton, speedy-sensitive.
- 3' Fossdick, plain.
- 2 1/2' Carlton, speed box.

MILLING MACHINES

- No. 5 B. & S. vert., circular attach.
- No. 2 Cincinnati, vertical.
- No. 3 Cin'ti, plain, table 45x12".
- No. 22 Becker Brainerd, tbl. 48x14".
- Newton, 60x12" horizontal.
- No. 5 Hendey, q. c., Mfrs. style.

PUNCHES AND SHEARS

- 60", No. 6 Hiles & Jones horizon-
tal, arranged for motor drive.
- 50" New McCabe.
- 18" L. & A., guillotine.
- 36" No. 1 Long & Allstatter, dbl. end.

PRESSES

- No. 76 1/2 Bliss, trimming.

GRINDERS

- Bridgeport, 60x12" takes 36" bet.
centers, Plain Roll Grinder.
- Landis, univ., 10" sw. takes 30" cent.
- Iroquois univ., 12" sw., 36" centers.

SHAPERS

- 28" Smith & Mills, single pulley drv.
- 24" Gould & Eberhardt.
- 16" Smith & Mills plain.

HAMMERS

- 40,000 lb. Chambersburg, dbl. frame,
steam.
- 24,000 lb. N. B. Pond, dbl. frame, stm.
- 6000 lb. N. B. Pond, dbl. frame, steam.
- 4000 lb. Chambersburg, steam drop.
- 3000 lb. Chambersburg, steam drop.
- 2700 lb. N. B. Pond, double frame,
forging.
- 2500 lb. Chambersburg, steam drop.
- 2000 lb. Chambersburg, dbl. frame,
forging.
- 1500 lb. Chambersburg, steam drop.
- 1100 lb. Bement, single frame.
- 1000 lb. Toledo, friction board drop.
- 200 lb. Bradley compact.

TESTING MACHINES

- 100,000 lb. Tinius-Olson tensile stnht.
- 100,000 lb. Riehle Bros. tensile stnht.

Write for Complete List of Miscellaneous Tools

J. J. McCabe Lathe & Machinery Corp'n
ROOMS 1805-10, 149 BROADWAY, NEW YORK

Going Out of Business

By Order of Court

Partial List of Machines On Hand

Prices Very Much Reduced

BORING MILLS

60" Bickford, standard, 2 heads, low price.
8-24" Bullard vertical turret.

14' Standard, 2 heads.
7½' Vertical Spindle.

DRILLS

8' Niles Plain Radial.
4' Gang, gear box drive.
6 spindle Baush, 1" capacity.
24" Barnes, all geared.

3 and 4 spindle Barnes gang.
20" Barnes, geared feed.
6 spindle Allen sensitive.

LATHES

52"x22' New Haven, belt drive.
48"x20' Fifeild.
38"x30' New Haven, very cheap.
36"x21' Double end lathe, t. g.
36"x16' Putnam.
32"x14' Fitchburg, 3 s. c., d. b. g.

28"x14' Fitchburg, 3 s. c., d. b. g.
30"x12' Johnson, t. g., low price.
28"x12' Putnam, q. c., d. b. g.
20"x12' Hamilton, rais'g blocks to 30.
20"x 8' Lodge & Shipley geared.
18"x 8' Morris, q. c., d. b. g.

MILLING MACHINES

No. 5C Becker Verticals, new.
No. 3 LeBlond, plain, high duty.
No. 2 Kempsmith universal.
50"x8' Ingersoll slab.

No. 25 Becker plain.
No. 2 Hendey Norton plain.
No. 1½ Hendey Norton universal.
Garvin No. 15 vertical, planer type.

PLANERS

84"x84"x13' Sellers, 3 hds., belt dr.
48"x48"x14' Powell, 4 heads, reversible motor drive, complete with electrical equipment.
36"x36"x12' Niles-B.-P., 3 heads.

48"x48"x16' Bement-Miles, 4 heads, belt driven.
36"x36"x18' Pease, 2 heads.
30"x30"x10' Flather, 2 hds., belt dr.
30"x30"x 6' Gray, 3 heads.

SHAPERS

24" Juengst geared.
18" Fitchburg, trav. head.

18" Niles, traveling head.
14" Hendey.

SLOTTERS

14" Sellers.
30" Bullard draw-cut.

10" New Haven.

MISCELLANEOUS

No. 26 Buffalo Armor Plate Shear, 4" cap., new, cheap.
30" Gear Cutters.

60" Springfield Face Grinder, new.
20" Greenlee Flat Turret Lathes.
30" Alligator Shear.

Write for Catalogue

Graves Machinery Exchange

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INCORPORATED

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LaPointe.

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Cut-off mch., No. 4 Nutter-B.

Drill, 6-sp, 14" Rockford gang.

Grinder, No. 6 Bryant, chuck'g.

Hack saw, No. 7 Racine.

Hammer, H. C. Smith auto.

Lathe, 12" Hendey, tool room.

Lathe, 9x21½ Sundstrand Mfg.

Lathe, 9x12 Porter-Cable.

Lathe, 16x7 Oliver, q. c. g.

Lathe, 18x8 Bradford, q. c. g.

Miller, No. 2-H Becker vert.

Miller, 4" P. & W. spline.

Planer, 30"x30"x8' Pond.

Press, No. 34 Consolidated, arch.

Press, No. 74 Consolidated.

Radial drill, 3' Dreses.

Radial drill, 3' Fostedick.

Riveter, ½" Shuster.

Sand blast, Type A-6 Pangborn.

Scrap compress, No. 10 Economy standard.

Shear, squaring, 96" Ohl, 16 ga.

Shear, 10' Bertsch, 11 gauge.

Turret lathe, 3x36, J. & L.

Turret lathe, 2x24, J. & L.

Turret lathe, No. 3 B. & O.

Turret lathe, No. 5 Foster.

Turret lathe, 14" Warner & S.

Wire weaving mch., S. & K.

McMullen Machinery Company

"Everything in Shop Equipment"

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"At Your Command with Second Hand"

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21' triple geared face plate drive Pit
Lathe for slotting, facing & boring.
60"x30" Fifield, face plate dr., 22' cent.
62"x22" Putnam, triple grd., internal
face plate drive, 13' centers.
62" Pulley, triple grd., face plate dr.
50"x14" 6" New Haven.
36"x20" Putnam, triple geared, face
plate drive.
30"x12" Niles-Bement-Pond, geared
head, heavy duty, quick change.
28"—45"x12 Harrington Gap Lathe.
24"x14" Prentice, geared friction
head, quick change.

VERTICAL BORING MILLS

120" Niles, 2 swivel heads.
84" Bickford, 2 swivel heads.
80" Niles-Bement-Pond, 2 sw. hds.
72" Niles, 2 swivel heads.
64" Poole, 2 swivel heads, thread
cutting.
44" Niles, 1 swivel hd., 1 tur. head.
42" Putnam carwheel, hub facing
attachment.
32" Rogers, swivel turret head, uni-
versal jaws.

HORIZONTAL BORING MILLS

Bement cylinder, 8" bar.
Barrett No. 2 cylinder, 5" bar.
Beaman & Smith No. 2 floor boring,
drill and milling machine, 4" bar.
Niles boring drilling mche., 4" bar.
Betts boring drilling mche., 5" bar.
Bement bor. drilling mche., 3 1/2" bar.
Newark bor. drilling mche., 3" bar.
Bement bor. drilling mche., 3" bar.
Bement bor. drilling mche., 2 1/2" bar.
Barnes drill'g tap. mch., 2 3/16" bar.
Underwood type 4 1/2" bar. floor plate
8"x9".

PUNCHES, SHEARS, ETC.

Pels Beam Shear, cap. 15" I beams.
Quickwork Rotary Shear, 48" throat,
1" capacity.
No. 664 Adriance Sq. Shear, 22 gauge.
Stoll 11" Squar'g Shear, No. 16 gauge.

PUNCHES, SHEARS, Etc.—Cont.

"B" Long & Allstatter single end
shear, 18" throat, 2 1/2" rounds.
Hilles & Jones angle shear, capa-
city 6x6x1/2"
No. 121 Toledo Boiler Maker Punch-
ing & Riveting Machine.
No. 6 Beatty S. E. Punch, 25"
Throat, double gap.
No. 7 Beatty S. E. Punch 15" throat.
1" Acme Hot Nut Punching Mche.

PRESSES

No. 4 A Bliss, adjustable bed,
4" stroke, weight 5800 lbs.
DG 5 Ferracute geared, 3" stroke
weight 8700 lbs.
No. 604 Bliss, rack and pinion reduc-
ing, adjustable stroke 4" to 42",
weight 12,500 lbs. (3).
No. 666 Toledo knuckle joint, 2 1/2"
stroke, 1000 tons pressure, weight
80,000 lbs. (3).
No. 857 Toledo rack and pinion reduc-
ing, adjustable stroke 5" to 40".
No. 856 Toledo rack and pinion reduc-
ing, adjust. stroke, 5" to 36" (2).
No. 2 1/2 E. J. Manville double acting,
stroke slide 4", stroke plunger 1 1/2".
No. 10 1/2 V. & O. dbl. acting, stroke
slide 1", stroke plunger 1 1/2" (5).
NEW No. 34 Excelsior 225 ton Hy-
draulic Tire Applying Press (2).

PLANERS

96"x96"x37' Planer, 4 heads.
14" Hilles & Jones Plate Planer.
72"x72"x14' Pond, 4 heads.
72"x70"x14' Sellers, 3 heads.
48"x48"x14' Patch, 4 hds., latest type.
42"x42"x14' Pond, 4 heads.
32"x36"x20" Woodward Powell, 2 hds.
36"x36"x12" Bickett, hvy. duty, 2 hds.
36"x36"x12" Bickett, hvy. duty, 1 hd.
16"x16"x42" Walter Bros., 1 head.
Two 28" Newton Pl. index centers.

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- 1—No. 0 Bickett vertical Mill and Profiler.

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| 1—No. 2 Becker plain, m. d. | 1—Nos. 1 & 2 Newton keyseat |
| 1—No. 4 Cincinnati univ., m. d. | mills, m. d. |
| 6—No. 32 Kempsmith, Lincoln. | 3—No. 3 $\frac{1}{2}$ Fox, power and hand, |
| 6—P. & W. 12" Auto. Mills. | table 7x27 $\frac{1}{2}$ ". |

MISCELLANEOUS

- 3—16"x8' Sidney Lathes, q. c., d. b. g.
- 1—50" Sellers Car Wheel Borer.
- 1—52" Bertsch Multiple Punch.
- 3—Quickwork Rotary Shear, cap. up to 1".
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- 2—Thompson Universal Grinders 10x36".
- 12—Gisholts, 12" and 24" Turret Lathes.
- 4—Multiple Drills, 10 to 24 spindles.
- 14—Screw Machines, $\frac{1}{2}$ to 3 $\frac{1}{2}$ " cap.
- 4—Radial Drills, 3 $\frac{1}{2}$ ", 4' and 5' plain and universal.
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- 1—Used 10x24" Landis Plain Grinder.
- 1—No. 20 Bliss Inc. Flywheel Type Press.
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Money back if not satisfied. Over 1,000 Machines in stock.

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72"x72"x26' PLANER

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- 13"x 6' Champion Tool Works Lathe.
- 16"x 9' Lehman Lathe, Quick Change Gears.
- 18"x 7' Oliver Lathe, Quick Change Gears.
- 18"x 6' Lodge & Shipley Geared Head.
- 20"x 10' Reed Lathe, Loose Gears.
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- 20" Rockford Stationary Head Drill.
- No. 310 Baker High Speed Drill 2 $\frac{1}{2}$ ".
- Five Spindle Detroit Horizontal Driller.
- No. 3 Brown & Sharpe Plain Miller, Belt Feed.
- 4—No. 15 Garvin Plain Millers.
- Van Norman Column Type Hand Miller.
- No. 330 Fay & Egan Variety Saw with Mortising Attachment.

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- Arbors, Solid**
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- Automatics**
National Acme Company, Cleveland
New Britain Machine Co., New Britain, Conn.
- Balancing Ways**
Anderson Bros. Mfg. Co., Rockford, Ill.
- Ball Bearings**
Abbott Ball Co., Hartford, Conn.
- Balls, Brass, Bronze and Steel**
Abbott Ball Co., Hartford, Conn.
- Band Saw Machines, for Metal**
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
- Barrels, Tumbling**
Abbott Ball Co., Hartford, Conn.
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
- Bearings, Babbitted**
Bunting Brass & Bronze Co., Toledo, O.
Johnson Bronze Co., New Castle, Pa.
- Belt Shifters**
Artisan Mfg. Co., Cincinnati, O.
- Bench Legs, Steel**
New Britain Mch. Co., New Britain, Conn.
- Bending Machines, Hand and Power**
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mch. Co., T. H. 417 E. 31st., N. Y.
Lourie Mfg. Co., Springfield, Ill.
Fedrick Tool & Machine Co., Philadelphia
- Boring Bars**
Fedrick Tool & Machine Co., Philadelphia
- Boring Bars, Cylinder**
Fedrick Tool & Machine Co., Philadelphia
- Boring, Drilling and Milling Machines, Horizontal**
Barnes Co., W. F. & John, Rockford, Ill.
Beaman & Smith Co., Providence, R. I.
- Boring Machines, Horizontal**
Avey Drilling Machine Co., Cincinnati
Fedrick Tool & Machine Co., Philadelphia
- Bronze**
Bunting Brass & Bronze Co., Toledo, O.
Johnson Bronze Co., New Castle, Pa.
- Bushings, Brass and Bronze**
Bunting Brass & Bronze Co., Toledo, O.
Johnson Bronze Co., New Castle, Pa.
- Case Hardening Compound**
Buchanan Chemical Co., C. G., Cincinnati
- Castellating Machines**
Craftsman Tool Co., Conneaut, O.
- Casters for Trucks**
Hamilton Caster & Mfg. Co., Hamilton, Ohio
- Centers, Index**
Carter & Hakes Mch. Co., W. Winsted, Conn.
Fay & Scott, Dexter, Maine
Willard-Middletown Machine Co., Middletown, Ohio
- Chains, Power Transmission**
Cushman Wheel Co., 1344 Altgeld St., Chicago
Whitney Mfg. Co., Hartford, Conn.
- Chasers**
National Acme Co., Cleveland
- Chucking Machines**
New Britain Mch. Co., New Britain, Conn.
- Chucks, Centering**
McCrosky Tool Corporation, Meadville, Pa.
- Chucks, Collet**
Noy Co., J. M., Hartford, Conn.
- Chucks, Drill**
Jacobs Mfg. Co., Hartford, Conn.
McCrosky Tool Corporation, Meadville, Pa.
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
- Chucks, Drill and Tap**
McCrosky Tool Corporation, Meadville, Pa.
Peter Bros. Mfg. Co., Algonquin, Ill.
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
- Chucks, Keyway Cutting**
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
- Chucks, Magnetic**
Heald Machine Co., Worcester, Mass.
- Chucks, Oval**
Prybil Machine Co., P., 512 W. 41st, N. Y.
- Chucks, Quick Change**
Geometric Tool Co., New Haven, Conn.
- Chucks, Wrenchless**
Thomas Elevator Co., 81 S. Heyne Ave., Chicago
- Cold Saws**
Burke Machine Tool Co., Conneaut, Ohio
Peter Bros. Mfg. Co., Algonquin, Ill.
- Collars**
Geometric Tool Co., New Haven, Conn.
- Couplings, Flexible**
Cooper Flexible Transmission Co., Inc., Brooklyn
Smith & Serrell, Newark, N. J.
- Cranes, Portable**
Canedy-Vito Mfg. Co., Chicago Heights, Ill.
Canton Foundry & Mch. Co., Canton, Ohio
- Crank Pin Turning Machine**
Fedrick Tool & Machine Co., Philadelphia
- Cutters, Adjustable**
McCrosky Tool Corporation, Meadville, Pa.
- Cutters, Keyseating**
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
Whitney Mfg. Co., Hartford, Conn.
- Cutters, Milling**
Whitney Mfg. Co., Hartford, Conn.
- Cutting-Off Machines**
Etna Mfg. Co., Toledo, Ohio
Peter Bros. Mfg. Co., Algonquin, Ill.
- Cylinder Boring Machines, Portable**
Fedrick Tool & Machine Co., Philadelphia
- Cylinder Grinders**
Schmidt Co., B. L., Davenport, Iowa
- Detectors**
Bennett Metal Treating Co., Elmwood, Conn.
- Die Heads, Self-Opening**
National Acme Company, Cleveland
- Dies, Pipe Threading**
Signal & Keeler Mch. Wks., Edwardsville, Ill.
- Dies, Screw and Thread Cutting**
Greenfield Tap & Die Corp., Greenfield, Mass.
National Acme Company, Cleveland
- Dies, Self-Opening Adjustable**
Greenfield Tap & Die Corp., Greenfield, Mass.
Rickert-Shafer Co., Erie, Pa.
- Drilling Fixtures**
Hartmann Mfg. Co., Hartford, Conn.
- Drilling Machine Heads**
Nelson-Black Mfg. Co., Detroit, Mich.
United States Drill Head Co., Cincinnati

Classified Finding Index

Drilling Machines, Bench

Avey Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Reed Co., Francis, Worcester, Mass.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Multiple Spindle

Avey Drilling Machine Co., Cincinnati
National Acme Company, Cleveland
Reed Co., Francis, Worcester, Mass.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Post

Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Mueller Machine Tool Co., Cincinnati

Drilling Machines, Radial

Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Mueller Machine Tool Co., Cincinnati
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive

Avey Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Reed Co., Francis, Worcester, Mass.
Taylor & Fenn Co., Hartford, Conn.
U. S. Machine Tool Co., Cincinnati, O.
Wisconsin Electric Co., Racine, Wis.

Drilling, Milling and Boring Machines, Vertical

Aurora Tool Works, Aurora, Ind.

Drilling Machines, Vertical

Aurora Tool Works, Aurora, Ind.
Avey Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Taylor & Fenn Co., Hartford, Conn.

Drilling and Tapping Attachments

Aurora Tool Works, Aurora, Ind.
Barnes Co., W. F. & John, Rockford, Ill.
McCroskey Tool Corporation, Meadville, Pa.
Reed Co., Francis, Worcester, Mass.

Drills, Portable Electric

Hisey-Wolf Machine Co., Cincinnati
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
Wisconsin Electric Co., Racine, Wis.

Drill & Chuck for Square & Hex. Holes

Watts Bros. Tool Works, Turtle Creek, Pa.

Dust Handling Equipment

Knickerbocker Co., Jackson, Mich.

Emery Stands

Blount Co., J. G., Everett, Mass.

Emery Wheel Dressers and Cutters

Taylor & Fenn Co., Hartford, Conn.

Feeders, Oil and Soda Water

New Britain Machine Co., New Britain, Conn.

Filing Machines

Johnson & Biddle Tool Co., Elkhart, Ind.

Filing and Sawing Machines

Johnson & Biddle Tool Co., Elkhart, Ind.

Forges

Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Forgings, Hollow Bored

American Hollow Boring Co., Erie, Pa.

Furnaces

Bennett Metal Treating Co., Elmwood, Conn.

Furniture, Machine Shop

New Britain Machine Co., New Britain, Conn.

Grinding Machines, Belt

Peerless Surfacing Machine Co., Troy, N. Y.

Grinding Machines, Bench

Blount Co., J. G., Everett, Mass.
Finley Co., J. A., Allston, Mass.
Hisey-Wolf Machine Co., Cincinnati

Grinding Machines, Cutter, Reamer and Tool

Blount Co., J. G., Everett, Mass.
Manhattan Machine & Tool Works, Grand Rapids, Mich.
National Acme Co., Cleveland
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Cylinder

Heald Machine Co., Worcester, Mass.
Schmidt Co., B. L., Davenport, Iowa
Whitney & Son, Baxter D., Winchendon, Mass.

Grinding Machines, Cylindrical

Manhattan Machine & Tool Works, Grand Rapids, Mich.
Schmidt Co., B. L., Davenport, Iowa
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die

Manhattan Machine & Tool Works, Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Drill

Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Face

Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Internal

Greenfield Tap & Die Corp., Greenfield, Mass.
Heald Machine Co., Worcester, Mass.
Schmidt Co., B. L., Davenport, Iowa.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio
Whitney & Son, Baxter D., Winchendon, Mass.
Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Portable

Finley Co., J. A., Allston, Mass.
Hisey-Wolf Machine Co., Cincinnati
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
Wisconsin Electric Co., Racine, Wis.

Grinding Machines, Snagging

Manhattan Machine & Tool Works, Grand Rapids, Mich.

Grinding Machines, Surface

Heald Machine Co., Worcester, Mass.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Universal

Greenfield Tap & Die Corp., Greenfield, Mass.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

Hack Saw Machines

Armstrong-Bloom Mfg. Co., 341 N. Francisco Av., Chicago
Racine Tool & Machine Co., Racine, Wis.

Hammers, Air

Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago

Hammers, Belt & Motor Driven

Beaudry & Co., Boston
United Hammer Co., Boston

Hammers, Power

Beaudry & Co., Boston
Quickwork Co., St. Marys, Ohio
United Hammer Co., Boston

Hammers, Riveting

Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
Quickwork Co., St. Marys, Ohio

Classified Finding Index

Heads, Dividing
Willard-Middletown Machine Co., Middle-
town, Ohio

Hoists, Electric
Thomas Elevator Co., 31 S. Hoyne Ave.,
Chicago

Hoists, Portable
Canton Foundry & Machine Co., Canton, Ohio

Jigs, Fixtures, Tools
Craftsman Tool Co., Conneaut, O.

Joints, Universal
Cooper Flexible Transmission Co., Inc.,
Brooklyn

Keys, Self-Fitting
Smith & Serrell, Newark, N. J.

Keyseating Machines
Rueher-Smith Co., East Liverpool, Ohio
Chattanooga Mch. Co., Chattanooga, Tenn.
National Machine Tool Co., Cincinnati
Whitney Mfg. Co., Hartford, Conn.

Lathe Accessories and Attachments
Fay & Scott, Dexter, Maine
McCrosky Tool Corporation, Meadville, Pa.

Lathes, Automatic
National Acme Company, Cleveland

Lathes, Bench
Blount Co., J. G., Everett, Mass.

Lathes, Engine
Barnes Co., W. F. & John, Rockford, Ill.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Fay & Scott, Dexter, Maine
Mueller Machine Tool Co., Cincinnati

Lathes, Foot Power
Barnes Co., W. F. & John, Rockford, Ill.

Lathes, Metal Spinning
Prybil Machine Co., P., 512 W. 41st, N. Y.

Lathes, Short Bed
Artisan Mfg. Co., Cincinnati, O.

Lathes, Speed and Hand
Blount Co., J. G., Everett, Mass.

Mandrels, Expanding
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Mandrels, Solid
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Metal Cutting Machines, Sheet
Quickwork Co., St. Marys, Ohio

Milling Attachments
Burke Machine Tool Co., Conneaut, Ohio
Willard-Middletown Machine Co., Middle-
town, Ohio

Milling Machines, Bench
Burke Machine Tool Co., Conneaut, Ohio
Carter & Hakes Mch. Co., W. Winsted, Conn.

Milling Machines, Hand
Burke Machine Tool Co., Conneaut, Ohio
Carter & Hakes Mch. Co., W. Winsted, Conn.
U. S. Machine Tool Co., Cincinnati, O.
Whitney Mfg. Co., Hartford, Conn.

Milling Machines, Horizontal
Beaman & Smith Co., Providence, R. I.

Milling Machines, Plain
Beaman & Smith Co., Providence, R. I.
Burke Machine Tool Co., Conneaut, Ohio

Milling Machines, Portable
Pedrick Tool & Machine Co., Philadelphia

Milling Machines, Vertical
Beaman & Smith Co., Providence, R. I.
Burke Machine Tool Co., Conneaut, Ohio
Taylor & Fenn Co., Hartford, Conn.

Motors, Electric
Reliance Electric & Eng. Co., Cleveland
Wisconsin Electric Co., Racine, Wis.

Oil Cups
Gits Bros. Mfg. Co., 1940 S. Kilbourn Ave.,
Chicago

Oil Extractors
Curtis, Albert B., Estate, Worcester, Mass.

Oil Hole Covers
Tucker, W. C. & F. C., Hartford, Conn.

Pattern Shop Machinery
Prybil Machine Co., P., 512 W. 41st, N. Y.
Townsley Mfg. Co., John T., Cincinnati

Pipe Bending Machines
Pedrick Tool & Machine Co., Philadelphia

Pipe Cutting and Threading Machines
Bignall & Keeler Mch. Wks., Edwardsville, Ill.

Piston and Piston Ring Machines
National Acme Company, Cleveland.

Planers
Ohio Machine Tool Co., Kenton, O.

Planers, Valve Seat, Portable
Pedrick Tool & Machine Co., Philadelphia

Polishing and Buffing Machines
Blount Co., J. G., Everett, Mass.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Hisey-Wolf Machine Co., Cincinnati
Independent Pneumatic Tool Co., 600 W.
Jackson Blvd., Chicago
New Britain Machine Co., New Britain, Conn.
Prybil Machine Co., P., 512 W. 41st, N. Y.
Wilmarth & Morgan Co., Grand Rapids,
Wisconsin Electric Co., Racine, Wis. [Mich.]

Presses, Arbor
Atlas Press Co., Kalamazoo, Mich.
Barnes Co., W. F. & John, Rockford, Ill.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Presses, Broaching
Atlas Press Co., Kalamazoo, Mich.
Lourie Mfg. Co., Springfield, Ill.

Presses, Foot
Atlas Press Co., Kalamazoo, Mich.
Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.

Presses, Power
Hendley & Whittemore Co., Beloit, Wis.
Loshbough-Jordan T. & M. Co., Elkhart, Ind.
Rockford Iron Works, Rockford, Ill.
Willard-Middletown Machine Co., Middle-
town, Ohio

Presses, Punch
Lewthwaite Mch. Co., T. H., 417 E. 31st, N. Y.
Loshbough-Jordan T. & M. Co., Elkhart, Ind.
Lourie Mfg. Co., Springfield, Ill.
Rockford Iron Works, Rockford, Ill.

Presses, Screw
Atlas Press Co., Kalamazoo, Mich.
Barnes Co., W. F. & John, Rockford, Ill.
Manhattan Machine & Tool Works, Grand
Rapids, Mich.
Townsley Mfg. Co., John T., Cincinnati

Pulley Machinery
Avey Drilling Machine Co., Cincinnati

Pulleys, Iron, Solid and Split
Frott Foundry Co., 328 N. Sangamon St.,
Chicago

Punch Press Feeds
Rockford Iron Works, Rockford, Ill.

Punch, Shear and Bender, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago

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Punches, Hand

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Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lawthwaite Mch. Co., T. H., 417 E. 31st St.,
New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power

Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies

Hendley & Whittemore Co., Beloit, Wis.
Lawthwaite Mch. Co., T. H., 417 E. 31st, N. Y.
Rockford Iron Works, Rockford, Ill.

Quenching Baths

Bennett Metal Treating Co., Elmwood, Conn.

Racks, Bar Stock

New Britain Machine Co., New Britain, Conn.

Reamers, Adjustable

Greenfield Tap & Die Corp., Greenfield, Mass.
McCrosky Tool Corporation, Meadville, Pa.

Reamers, Cylinder

McCrosky Tool Corporation, Meadville, Pa.

Reamers, Solid

McCrosky Tool Corporation, Meadville, Pa.

Riveting Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Roll Cutters

Armstrong-Blum Mfg. Co., 341 N. Francisco
Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lawthwaite Mch. Co., T. H., 417 E. 31st, N. Y.
Tucker, W. C. & F. C., Hartford, Conn.

Scraping Machines, Hand & Pneumatic

Anderson Brothers Mfg. Co., Rockford, Ill.

Screw Driving Machines, Automatic

Reynolds Machine Co., Massillon, Ohio

Screw Driving Machines, Portable Electric

Hiesey-Wolf Machine Co., Cincinnati

Screw Machines, Automatic

National Acme Company, Cleveland
New Britain Mch. Co., New Britain, Conn.

Screw Machines, Auxiliary

National Acme Company, Cleveland

Screws, Cap and Set

National Acme Company, Cleveland

Second-Hand Machinery Dealers

Allen, Harry F., 20 Church St., N. Y.
Allen Mch. Co., B. C., 551 W. Monroe St.,
Chicago
Austin Mch. Corp., 609 Railway Exchange
Bldg., Chicago
Badger-Pachard Mch. Co., Milwaukee, Wis.
Bath & Co., Cyril J., Cleveland, O.
Higgs-Watterson Co., Cleveland
Hotwink Brothers, New Haven, Conn.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Easley Machinery Co., E. L., 555 Washington
Bldg., Chicago
Graves Mch. Exchange, Jersey City, N. J.
Harris Bros. Co., W. 35th & Iron, Chicago
Hill, Clarke & Co., 649 W. Washington
Bldg., Chicago
Johnson & Sons Machinery Co., Wm. G.,
St. Louis, Mo.

Second-Hand Mch. Dealers—Cont'd

Jones Machine Tool Co., Cincinnati
Little Co., W. F., Cleveland
Lucas & Son, Inc., Bridgeport, Conn.
McCabe Lathe & Machinery Corp., J. J.,
149 Broadway, New York
McCabe & Sheeran Machinery Corporation,
50 Church St., New York
McDonald Machinery Co., St. Louis
McMullen Mch. Co., Grand Rapids, Mich.
Machineshop Equip. Corp'n, Boston, Mass.
Marr Machinery Corporation, Pittsburgh, Pa.
Morey and Co., Inc., 408 Broome St., N. Y.
New York Mch. Exchange, 50 Church St.,
New York
Niles-Bement-Pond Co., 111 Broadway, N. Y.
O'Brien Machinery Co., Philadelphia
Osborne & Sexton Machy. Co., Columbus, O.
Prybil Machine Co., P. 512 W. 41st, N. Y.
Randle Machinery Co., Cincinnati
Reeve-Fritts Co., 37 S. Desplaines, Chicago
Reliance Mch. Sales Co., Pittsburgh, Pa.
Riverside Machinery Depot, Detroit, Mich.
Rowlington, D. E., Utica, N. Y.
Russell Machine Co., Pittsburgh, Pa.
Simmons Machine Co., Albany, N. Y.
Stoshr Mch. Co., A. M., 844 N. Wells St.,
Chicago
Strong, Carlisle & Hammond Co., Cleveland
Toomey, Inc., Frank, Philadelphia
Tutor, Velick & Co., Inc., Lake & Desplaines
St., Chicago
Warner, H. D., Hartford, Conn.
Wayne Machy. Co., Fort Wayne, Ind.
Winterer, Herman L., Philadelphia
White Machy. Co., A. D., 108 N. Jefferson
St., Chicago

Shafts, Flexible

Haskins Co., R. G., 29 S. Desplaines St.,
Chicago

Shafts, Steel

American Hollow Boring Co., Erie, Pa.

Shaping Machines

Columbia Machine Tool Co., Hamilton, Ohio
Ohio Machine Tool Co., Kenton, Ohio
Osborne & Sexton Machy. Co., Columbus, O.
Rhodes Mfg. Co., Hartford, Conn.
Smith & Mills Co., Cincinnati
Universal Machine & Tool Co., Canton, O.

Shears, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco
Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Kiddier Mfg. Co., J. F., Burlington, Vermont
Lawthwaite Machine Co., T. H., 417 E. 31st
St., New York
Quickwork Co., St. Marys, Ohio
Tucker, W. C. & F. C., Hartford, Conn.
Whitney Metal Tool Co., Rockford, Ill.

Shears, Power

Hendley & Whittemore Co., Beloit, Wis.
Quickwork Co., St. Marys, Ohio

Sheet Metal Working Machinery

Quickwork Co., St. Marys, Ohio

Slotting Machines

Rhodes Mfg. Co., Hartford, Conn.

Sprockets

Cullinan Wheel Co., 1344 Altgeld St., Chicago

Straightening Machines

Townley Mfg. Co., John T., Cincinnati
Whitney Metal Tool Co., Rockford, Ill.

Stand Setters, Self-Opening

Geometric Tool Co., New Haven, Conn.

Swaging Machines

Etna Mfg. Co., Toledo, Ohio

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Walton Co., Hartford, Conn.

Tapping Machines and Attachments

Avey Drilling Machine Co., Cincinnati
 Beaman & Smith Co., Providence, R. I.
 Burke Machine Tool Co., Conneaut, Ohio
 Geometric Tool Co., New Haven, Conn.
 Greenfield Tap & Die Corp., Greenfield, Mass.
 McCroskey Tool Corporation, Meadville, Pa.
 Rickert-Shafer Co., Erie, Pa.
 Whitney Mfg. Co., Hartford, Conn.
 Whitney Metal Tool Co., Rockford, Ill.

Taps and Dies

National Acme Company, Cleveland

Thread Dies

Colven, J. M., Yonkers, N. Y.

Threading Machines, Bolt and Stud

National Acme Company, Cleveland

Threading Tools

Armstrong Bros. Tool Co., 308 N. Francisco
 Av., Chicago
 National Acme Company, Cleveland

Tool Holders

Armstrong Bros. Tool Co., 308 N. Francisco
 Av., Chicago

Tools, Boring

Armstrong Bros. Tool Co., 308 N. Francisco
 Av., Chicago

Tools, Box

Biggs, P. H., Cleveland, O.

Tools, Lathe and Planer

Armstrong Bros. Tool Co., 308 N. Francisco
 Av., Chicago

Tools, Machinists'

Armstrong Bros. Tool Co., 308 N. Francisco
 Av., Chicago

Trucks, Machine Shop

New Britain Machine Co., New Britain, Conn.
 Towseley Mfg. Co., John T., Cincinnati

Turntables

Canton Foundry & Machine Co., Canton, O.

Turret Tool Posts

Fay & Scott, Dexter, Maine

Universal Joints

Hartmann Mfg. Co., Hartford, Conn.

Valve Grinders

Independent Pneumatic Tool Co., 800 W.
 Jackson Blvd., Chicago

Valves

Powell Co., Wm., Cincinnati

Vises, Drilling Machine

Armstrong-Bloom Mfg. Co., 341 N. Francisco
 Av., Chicago
 Armstrong Bros. Tool Co., 308 N. Francisco
 Av., Chicago

Carter & Hakes Mche. Co., W. Winsted, Conn.
 Thomas Elevator Co., 51 S. Mayne Ave.,
 Chicago

Vises, Machinists'

New Britain Machine Co., New Britain, Conn.

Vises, Milling Machine

Carter & Hakes Mche. Co., W. Winsted, Conn.

Vises, Shaper

Columbia Machine Tool Co., Hamilton, Ohio

Wood Working Machinery

Hendley & Whittemore Co., Beloit, Wis.
 New Britain Machine Co., New Britain, Conn.
 Fryhill Machine Co., P., 512 W. 41st, N. Y.
 Towseley Mfg. Co., John T., Cincinnati
 Whitney & Son, Baxter D., Winchendon, Mass.

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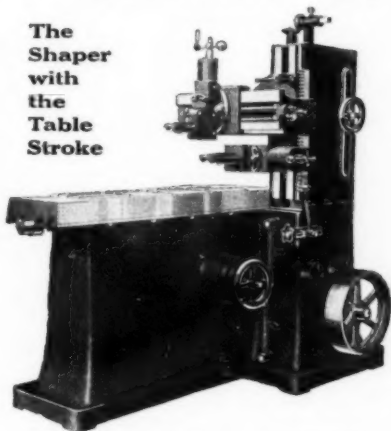
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THE TABLE STROKE, with its firm, even action, insures a new degree of shaper precision. And with its heavier cuts, at speeds as high as 40 strokes a minute, it turns out more work.

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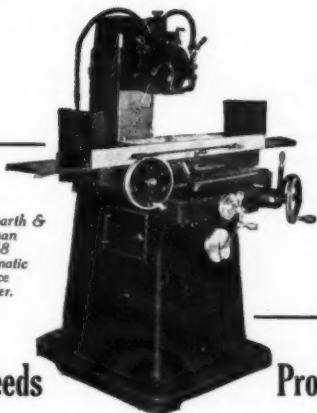
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Universal Machine & Tool Co.
Canton, Ohio

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No. 78
Automatic
Surface
Grinder.*



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